

Home

An Argus Foundation Publication

Computing WEEKLY

FREE

No. 33
Oct 18-24, 1983

38p

**£1,000-worth
of Virgin
software to be
won**

PROGRAMS TO TYPE IN FOR:

Commodore 64,
Spectrum, VIC-20,
ZX81,
Oric, TI-99/4A

SOFTWARE REVIEWS FOR:

BBC, Atari, ZX81,
Oric, Spectrum,
VIC-20, Dragon

**Make flicker-free
movies with
your Spectrum**

PLUS:

U.S. Scene, your
letters

COMING SOON

THE HOBBIT

This incredible adventure
game will soon be
available for the Oric
Price £14.95 post free
Order now for delivery in
late September

Only from

TANSOFT

3 Club House, 85 CAMDEN
Tel: 020631 2271/2/3/4



Software man builds a galactic empire

Software boss Mark Eyles has started writing a book based on the galactic empire he dreamed up for the back of his company's games cassette.

Mr Eyles, 35, is the founder and publisher of Quicksilver, hopes to have it finished by the middle of next year.

The story will take place far in to the future in the futuristic film page complete with heroes, villains, a friendly alien and evil aliens.

And now Mr Eyles, 35, is looking for names for the characters. He invited Home Computing Weekly readers to send their suggestions to him at Quicksilver.

continued on page 3

Games player turns into a computer

Games players will be able to turn their Vector consoles into full fledged home computers.

Malcolm Bradley, has just produced a plug-in keyboard which adds 48 keys, 16K of random access memory and 128K of ROM.

But John Garner, the company's UK sales manager, said the features of the production unit had not been finally decided.

He said: "We're talking about something which will be out, at

continued on page 3

COMING SOON

THE HOBBIT

This incredible adventure
game will soon be
available for the Oric
Price £14.95 post free
Order now for delivery in
late September

Only from

TANSOFT

3 Club House, 85 CAMDEN
Tel: 020631 2271/2/3/4

Spectacular scenes will find that seeing is believing when they open the flood-gates. The Commission of Glorious... the latest creation from New Generation. You will be seeing the Universe from the end that now controls all things. But beware – the sound of lightning approaching could be found!

Stature is the vital ingredient of "Elocution" as you'll be venturing into the space pursued by walking and flying (discovery).

All these exciting 3D games have been designed by MobyGames Inc., the 3D expert. They'll have you leaping out of your seat because you don't just play New Generation games, you live them.

40

Small intestine for analysis

Page 8 HOME COMPUTING WORLD, January 1989



The Vectrex game player—fitting on top of the prototype keyboard which turns it into a computer

Vectrex

From front page

the market, to the middle of next year. This market is changing so quickly and it is the manufacturers which will decide what we offer."

The Vectrex game player, costing £170, has a five square monochrome screen and a detachable joystick unit with five buttons.

The prototype keyboard is designed to fit the game unit and stands on top. Although a price has not been decided, it would have to be competitive with complete home computers.

Nelson Bradley says the Vectrex computer gives a sharper, faster moving image, using less calculating power because it uses the vector scan technique instead of the raster scan used by domestic TVs.

Raster scan involves drawing the screen every one-fifth of a second. Vector scan creates only the image required — focusing it upwards (etc.) — without scanning the whole screen.

Vectrex accepts only cartridges and there are also screen overlays to add colour.

The keyboard unit will connect

to a 40 by 25 display. Also promised is an extended BASIC, full screen editor, user-definable function keys using a game controller and the automatic, three-channel sound over five octaves with sound envelope and more commands.

It uses a 6809 processor, like the Dragon.

Program authors will have to buy a license for detailed information — a move which, says the company, is to protect its secret code, both in

There will be a string floppy, RS-232 port, cassette expansion slot, cartridge slot but no cassette recorder port.

The computer is tiny, will run all Vectrex games, provides an SD output and light pen.

The SD viewer, which will cost £40-£50, is a sort of goggles with a hood and hand-band. It front of the eye's mirror is a spinning coloured disc, driven by a keyswitch. When viewing a flickering screen this gives an effective SD image in colour.

The light pen, priced at £20-£30, has software to allow line dragging, annotation and overlays of previous frames.

Both peripherals come with a free cartridge. Vectrex cartridges usually cost £10-£20.

Write to: **Nelson Bradley, CP Microsystems, 85-861 Uxbridge Road, Ealing, W5 3PZ**

Empire

From front page

The empire theme has been continued on the cassette video and advertisement area, most notably for Targem where the player is a sort of merchant adventurer of space.

My style said "I've always wanted to see a bit of sci-fi since I've been with Quicksilver but I've got my inspiration from the series."

"I haven't thought of a name for the book yet but it will be a cross between science fiction and games — a sort of games fiction."

The futuristic sci-fi authors are principally Brian Aldiss, Michael Moorcock and Thomas Pynchon because they can turn their hands to other forms of fiction as well.

We had planned to take time off next week in the summer to make a start, but was too busy.

We gave him and up a typewriter and desk at a guest corner at home and is determined to spend a few hours a week. So far he has stopped on the time to complete the book.

We said "Your call will stop me putting a off. It will give me

that kick up the backside to be me going. I don't want it to do, an any longer than the first half of next year or I'll lose interest."

"After that I've got plans for other books — non fiction, short stories, and a novel I've got enough ideas to keep me going."

• A. Quicksilver's customer has complained in the Advertiser Standard's Auckland about an advertisement which stated: "Free software with every tape recorder available." An ASA spokesman said: "We did receive a complaint of this nature which the advertiser, having considered it, decided not to pursue."

Quicksilver, 18 Palmerston Road, Southampton, SO9 3LL.

£200 colour monitor

Philips's first computer related product is a 14-inch colour monitor on contract for under £200. Called the CM14, it's designed to work with virtually any computer or games machine.

Philips, Victoria Road, London W10 6AB.

You could be on our pages

We welcome program articles and tips from our readers.

PROGRAMS should, if possible, be computer printed to a width of 80 characters (use a new ribbon) and/or sent on cassette. Check carefully that they are bug-free. Include details of what your program does, how it works, variables you have used and hints on conversion.

ARTICLES on using home computers should be no longer than 3,000 words. Don't worry about your writing ability — just try to keep to the style in *UCW*. Articles most likely to be published will help our readers make better use of their micro by giving useful ideas, possibly with programming examples, we will convert any sketched illustrations into finished artwork.

TIPS are short articles, and brief programming routines which we can put together with others. Your hints can aid other computer users.

Competitive rates are paid.

Keep 3 copy of your publications and include an SAE if you want them returned. Label everything clearly and give a daytime and home phone number if you can.

Paul Upstart, Home Computing Weekly, 145 Charing Cross Road, London WC2N 6ER



Adrian Hodges and Jo Wheeler will present Central TV's *Mighty Micro Mission*.

A mission to demystify the micro

Central TV is jumping on the home computer bandwagon with *The Mighty Micro Mission*, a new TV series that will emphasize home computer games.

When Mary Blaine will, Central says, explain what shopping at computer technology today is really like looking ahead to future developments, and is intended to demystify the computer world — for example, by explaining computers from the IBM and ERM.

Each week, a panel of five children will try out a range of hardware and software.

Presenting the show are Jo Wheeler and Adrian Hodges, two media experts. John Barker of Warwick University, and three

will be joined each week by a number of well-known names.

The first programme will feature Dave Lee, Brian and Patrick, Robert of Robin's Cube again, Alan Brady, Graham and Chris Sney, Peter Chop of The Cheese Recorder, whose brother, Graham, has been recruited by his specialist, and make a guest appearance on the second programme. And Rick Winkman will appear on the third.

If you live in the East of West Midlands, you'll be able to tune into the first four programmes in 5.15 every Wednesday from 9 November. The series will run for six weeks, and may be repeated before Christmas. Central is hoping the other TV regions will soon follow.

For their 15, members receive a membership card, a quarterly magazine and details of local TI user groups.

They will also have access to the Titmouse software library, which offers a mail order service for software from all over the world, as well as books and tapes.

Paul Dault, who ran up Titmouse, will continue to be involved with the network, running the software library and contributing to the magazine.

Ray Hodgson, the new organizer, is no stranger to organizing clubs — the set up the first Area VCS user groups in the UK. She will have full-time staff who can answer membership queries on the spot, and get answers to technical queries. Members can ring the club on 0628 718996.

TI Home Computer Users Club, PO Box 196, Macclesfield, Dorset BA4 1XX.

Why programs need a seal of approval

Microcomputers, we are constantly being told, will bring about a revolution in the classroom.

A prerequisite of this revolution will be the ready availability of top quality software, fully documented and error checked and free from bugs.

Anyone who takes the trouble to read the software reviews in this and other magazines will know that there is not, at present, a great deal of educational software available, and a good proportion of what there is at best of dubious educational benefit.

In the short time I have been involved in software reviewing, it has become increasingly clear to me that parents of children who use micros at school or at home are crying out for some decent software to save their children away from Spore Invaders and the like.

At the moment there is no way for them to check the quality of the software that they are thinking of buying (unless they cut out all the reviews and file them away for future reference).

It is said therefore seem like a very good idea to have some sort of national standard by which educational software can be measured.

Moving gives the subject a great deal of thought I have come up with the following ideas:

1. That representatives of the microcomputing industry periodically from the software itself approach the Department of education with a view to setting up a joint panel of teachers and programmers to identify the areas in which microcomputers can be most beneficial.
2. Having identified these areas, produce a set of guidelines for aspiring software authors in order to achieve some uniformity of presentation.
3. Anyone wishing their software to carry Department of Education approval would have to submit their programs to the panel and carry out any changes that the panel decide are necessary. Then, and only then, would authors be allowed to advertise their programs as "approved educational software".

It is my belief that the availability of software carrying such approval would encourage parents who are contemplating buying their children a micro to go ahead with the purchase, secure in the knowledge that it will help them to learn as well as giving them many hours of entertainment.

Obviously a great deal of discussion would need to take place before any idea could be put in to practice but it is essential that some sort of debate should start now if our children are to reap the rewards that the microcomputer offers.

Graham Barrow
Farmer, Sharnhall Software,
Richmond,
Sussex

New club for TI owners

TI owners now have a personal user group, which takes over from the old Titmouse.

Called the TI Home Computer Users Club, it aims to offer the same benefits as Titmouse, but in a reduced fee of £2 per year instead of £10.

The collection is free will be possible because the new club, run by Ray Hodgson of Hodgson Associates, is a series of more membership. TI has given the club access to its own mailing list, and will be paying club attention to work on new TI-99/4A's sold.

In addition, TI will be supporting the club software product (firmware) and technical advice, "though not financially", according to TI's Robin Flood. "It's not going to be a membership for TI".



SKI RUN

All the excitement and skill of the real thing, with downhill, slalom, and giant slalom runs that reward the most skillful skiers. Includes 100% quality graphics and brilliant sound effects.

Boom Software

It will blow your mind



LOGGER MANIA

Get your chainsaw ready for the ultimate logging challenge. Cut through logs, trees, and stumps in a series of levels that will test your skill and speed. Includes 100% quality graphics and brilliant sound effects.



SPACE RAIDER

Explore the vastness of space and discover the secrets of the universe. A thrilling space adventure with 100% quality graphics and brilliant sound effects. Includes 100% quality graphics and brilliant sound effects.



ANNIHILATOR

Experience the ultimate in action. A thrilling space adventure with 100% quality graphics and brilliant sound effects. Includes 100% quality graphics and brilliant sound effects.

Post this coupon now to Boom Software
2-4 Chichester Road, Chichester, London WC2A 4SG

Please send me the following:

£3.95
£5.95
£4.95

Annihilator
Space Raider
Logger Mania

payable to Boom Software

100% quality graphics and brilliant sound effects.

Name

Address

£2 Commodore 64
and VIC20



The LAUGHING SHARK proudly presents



RAMK IN FENSE MICRO RANG? SOME-ONE'S PULLED THE PLUG SO FOR THIS MONTHS ADVENTURES, WE'RE ALL IN THE DARR!!



SPECTRUM Spectrum 48K \$5.99
 Your only adventure in the universe 100% by Cools.
 100% Action by Mark Kelly



QUETZALCOATL Spectrum 48K \$5.99
 Trapped in an Aztec temple your only means of escape is through the passages rising the vengeance of the Aztec Gods by David Briggs



ROBBER Spectrum 48K \$5.99
 A three part criminal computer to mean you off a life of crime by Mark Kelly



TRENCH DMC II \$7.99
 A real-time all-action fight to save the between by Paul Miller



LOST Spectrum 48K \$5.99
 A real-time all-action fight to save the land to help you can live by John Hunt



OWLCAT DMC II \$7.99
 Fight for the crown in your front room... a very realistic simulation of what International by Charles Miller



CAPTAIN DMC II \$7.99
 It's a fight for the crown in your front room... fight the computer as a Rebel by Andrew Morton





MICROBOND **INC.** **27.65**
A graphically stunning collection of words, phrases, and images.



FALCON PATROL, Commodore 64
16.59
 You fly the Falcon, a new plane assigned to the Falcon Patrol. It's a battle to survive by force.



WYOMING Commodore 64
4.95
 Shows you how to play Laser Chess
 Rules to the Western Front
 by Wayne Dwyer



ROBOPOTS THIS WEEK **\$6.99**
Discover the Robopots: Self-Construct and Age the
Radio-Controlling Robot by Malcom Adams



FUN-FUN TIPS!!
 SUPERBOWL LET'S GO TO THE PLACES - Two
 compressed games for the price of one by 100



ICHING
The Great Book of Changes
1600-1650
Diamond Star Oracle
- 24 Symbols - your
future.



**CASTLE
ADVENTURES**
By Conrad Jacobson
PAPERBACK
1986 200 pp.
\$14.95 (hbk)
Illustrated by the author
Genre: realistic and
contemporary and
science fiction
1575 **1575**



RENTAL
By January 1988
the 100,000-
sq-ft building
will house a
theater and film
studio, a restaurant
and film gallery.
Rental fees
will be \$100,000



CONSPIRACY
By Nick Bagnoli
and John J. Horgan
Feb. 1991
\$14.95
An original, hair-
raising look at the
game.
Reprint only
\$5.95



**WILLIAM
CLAYTON**
By David Moore
(Doubtless is the
best man)
My dear Sir
I have the pleasure
to inform you that
the book
is now
in the
hands of the
author.

September
1994-1995

**PLANNED
PARADE**
For High Schoolers
7:30-10:00 AM
FEB 2000
Add the thrill of
this exciting event.



LAGUNA
By James Miller
Laguna means water
land inside
that isn't going
to be turned into
— food like protein,
or like medicine
11 11 11 11 11 11



**DEATH
ON LINE**
The (new) Broadway
musical, *Death* is
not dead.
Photo: *Death*
on the high
road.

VIRGIN GAMES GAMING

Our **WebMD** is growing its number of the
 sites and even plans to roll bugs and other
WebMD **WebMD** **WebMD**

- a year's FREE membership of the **CLARET GUILD**
- FREE ENTRY to the next WINCAGE CLARET GUILD Dinner
- A FREE PRIZE consisting of a year's entry to a trip on the WINCAGE CLARET FLYER to the VINEYARD MAKERS REGIONAL STUDIOS in California. And then to see yours with James. **ENTER FOR A CHANCE TO WIN!**
- 50 VINEYARD VISITS OF VINEYARD CLARET TRAVEL
- FREE THREE COLOURS OF VINEYARD CLARET COFFERS

**VIRGIN GAMES BUS
TOUR**

**THINGS CHANGE ARE ON THE
HORIZON** Look out for the THINGS
CHANGE Plan 800. From
SEPTEMBER onwards our spe-
cialist double dealer games but with
BEST POWER throughout the A.D.,
demonstrating our games. In the public,
in comparison (where possible) with
local video outlets.

GAMES AVAILABILITY

If your L&L, AA, B&B, A&L, or B&B is not yet checking **VENOUS CATALYST** - let them be checked too - by all hospitals you can. **VENOUS CATALYST** from **THE CATALYST**

**SEND NOIAL RTVALANT[®] Dept.,
VINSON CLARK, 47-02
PONTOMELLO ROAD, LEBRON
NY 11434 and use a check or postal order
for the right amount and DON'T
FORGET to put your name and address
across the envelope!**

THE "I WANT TO BE RICH AND FAMOUS" DEPARTMENT

If you have a yearning to be **HEEN AND FILMBORE** and have written an **ORIGINAL, CANINE PROGRAM**, with good graphics for any of the popular home computers other than the **CRAT**, **PLEASE SEND A CASSETTE VERSION** with details **TO US**.

To obtain **REVIEWS** of current ads, please write to the "DON'T JUST TALK ABOUT IT" Dept. at: **VISION PAPER LTD., 80-88 PORTLAND ROAD, LONDON W11 3BB**

Our fun, to-play games are available from P.M. SMITH, BROOKS, TOWNIE, SPECTRUM, MACKAYMANAGEMENT, LEWISBRIDGE, BELFRIDGE, HAMLETS, WILDINGS, CAMEO CENTRE, STONE PALACE, VORON STONE, MARSHES, WOOLWORTHIE and all major computer shops everywhere.

Quick reactions and good destructive planning are needed to play David Nowotnik's game for either mode of the Oric

Crash!

How good are you at destruction?



In several respects *Crash!* is an ideal game. It is very simple to play, a simple happens (any key) is all that is required by the player, it can be stopped by games players of all ages.

However, for a first event you will need good reactions, and a logical plan of destruction!

Crash! has been described as a knockout class, but once you have played both games you should appreciate that they are quite different.

In *Crash!* the wall appears at the base of the screen. As a brickwork, the object is to knock bricks from the wall. This is done by firing an object — as the case is struck — at the wall.

The screen will bounce back and forth across the top of the screen until you press a key, at which point it will fall, and knock on the first brick in its path.

That may sound simple, but in your play the game you will soon

realise that you can remove more than one brick at a time.

As with a pile of bricks in a fireplace, if you can remove a brick from down in the wall, then bricks diagonally above it will also fall down.

You get an extra surprise as you need, and a hinting factor with this game, so you need a good strategy and accuracy in aiming the marks to achieve a high score.

The wall will ramp up the screen,

How it works
00-070 FORCE to any defined graphics, and set some random variables.
100-130 PRINT rate and receive a new request.
140-160 PRINT wall and ground than symbol to marker.
200-250 move objects down the screen, and check for a keypress.
260-400 bounce screen when the edge of screen is reached.
500-570 move marks down screen, check for a brick and bottom of the screen.
600-640 remove bricks, mark new holes.
700-750 judgement wall control — if 0, stop wall up one. **760** check if new row of bricks should be placed.
800-830 check if upward movement of wall means end of game.
1000-1050 calculate to check mark score and bricks for score.
1060 end of game message.
9999 continue with.

Main variables
00-000, **00-000**, **00-000** — screen control and display target control.
000 — points, a row of bricks.
000 — high score variable.
000 — game score.
000, **000** — counters, used on walling wall.
000 — plus position of fall.
000, **000** — used in destruction of wall.
00 — horizontal direction of marks.
00 — a counter used in destruction whether a new row of bricks should be placed.

directly at first, then more rapidly in the game progress.

When any brick reaches the level of the marker — the greatest than symbol at the top left of the screen — the game is over. It is possible to remove all the bricks in the wall, but more walls will appear, so you can never lose the computer.

I used this paper as the instructions on a stand in a local film museum. The highest score achieved on the day was just over 1000, with one point for every brick removed.

Is this your best?

ORIE PROGRAM

[illegible][illegible]

THE FABULOUS CASSETTE

50

ONLY £9.95

(INC. P&P and VAT)

DRAGON **DDC** AM

Spectrum **Apple II** ATARI

ORIGI ZX81 VIC-20

EXPRESS DELIVERY ORDER NOW

Please send me by return of post:
 50 cassettes (50 at £2.99 per tape)
 1 cassette in package (total value for
 example) to be added to
 £ to Cascade Games Ltd

Dragon	<input type="checkbox"/>	ZX81	<input type="checkbox"/>	Atari	<input type="checkbox"/>
Apple II	<input type="checkbox"/>	VIC-20	<input type="checkbox"/>	Spectrum	<input type="checkbox"/>
ORIGI	<input type="checkbox"/>	Apple	<input type="checkbox"/>	Amstrad	<input type="checkbox"/>

Name

Address

Post Code

Country or N/A

Send in 2 cheques or company order form

Cascade Games Ltd

Units 4 & 5 Bayview Cottages, Hainbury
 North Notts LE12 5BQ, England
 Telephone: 0533 504525



cascade
 GAMES LTD

50 GAMES
ON ONE GREAT
CASSETTE

*DON'T MISS THIS
INCREDIBLE OFFER*

**NOW AVAILABLE FROM W. H. SMITH,
JOHN MENZIES AND BOOTS***

Rid the world of the Transylvanian Terror before he
introduces you to the dark world of the living dead in...

Transylvanian Tower

**A spectacular 3-D maze adventure
for the 48K Spectrum only £6.50**

"Enthralling and addictive"... Popular Computing Weekly

"Addictive"... Sinclair User

*"Transylvanian Tower is an excellent game at
a reasonable price"... Personal Computer News*

Dealer enquiries welcome

* Selected computer branches only



Adventurous Programs always wanted. Please send sample - generous cash payments!

RICHARD SHEPHERD SOFTWARE

ELM HOUSE, 23-25 ELMSHOTT LANE, OXFORDHAM, SLOUGH, BERKS. TEL. (06288) 63531



A STEP BEYOND THE ARCADE...



Demo Knight - The Valley - Strategy 1 - Invasion - Strategy 2 - Bismark
White Barrows - Detective - Cells & Serpents - Stockmarket
Conquering Everest - Climb/Rumour - Gallery of Death - Planetfall



ASP SOFTWARE
145 Charing Cross Rd, London WC2H 0EE
Tel: 01-437 1002

Now available from:

Defted Electronics
Blackburn
Tel: 0525 222222

John W Reynolds Ltd
101 Lutter St
Buckingham MK16 2BJ

Maple Ltd
1 January St
Bristol

Computer Centre
24 The Parade
Barnstaple
Devon PL4 8AA

Software City
100 West Passage
Bournemouth
W Dorset BH1 1AA

RA Computer Ltd
100 Lutter St
Buckingham MK16 2BJ

RA Computer Ltd
100 Lutter St
Buckingham MK16 2BJ

Baroness Ltd
234 High St
Bristol

Widenedale Electronics Ltd
100 West Passage
Bournemouth
W Dorset BH1 1AA

Thorn & Sons
100 Lutter St
Buckingham MK16 2BJ

Computer Centre
100 Lutter St
Buckingham MK16 2BJ

RA Computer Ltd
100 Lutter St
Buckingham MK16 2BJ

The Computer Centre
100 Lutter St
Buckingham MK16 2BJ

RA Computer Ltd
100 Lutter St
Buckingham MK16 2BJ

Yates & Sons
100 Lutter St
Buckingham MK16 2BJ

Philip Cooke & Sons
100 Lutter St
Buckingham MK16 2BJ

Maple Ltd
100 Lutter St
Buckingham MK16 2BJ

RA Computer Ltd
100 Lutter St
Buckingham MK16 2BJ

Defted Electronics
Blackburn
Tel: 0525 222222

John W Reynolds Ltd
101 Lutter St
Buckingham MK16 2BJ

Maple Ltd
1 January St
Bristol

Computer Centre
24 The Parade
Barnstaple
Devon PL4 8AA

Software City
100 West Passage
Bournemouth
W Dorset BH1 1AA

RA Computer Ltd
100 Lutter St
Buckingham MK16 2BJ

RA Computer Ltd
100 Lutter St
Buckingham MK16 2BJ

Baroness Ltd
234 High St
Bristol

Widenedale Electronics Ltd
100 West Passage
Bournemouth
W Dorset BH1 1AA

Thorn & Sons
100 Lutter St
Buckingham MK16 2BJ

Computer Centre
100 Lutter St
Buckingham MK16 2BJ

RA Computer Ltd
100 Lutter St
Buckingham MK16 2BJ

The Computer Centre
100 Lutter St
Buckingham MK16 2BJ

RA Computer Ltd
100 Lutter St
Buckingham MK16 2BJ

Yates & Sons
100 Lutter St
Buckingham MK16 2BJ

Philip Cooke & Sons
100 Lutter St
Buckingham MK16 2BJ

Maple Ltd
100 Lutter St
Buckingham MK16 2BJ

RA Computer Ltd
100 Lutter St
Buckingham MK16 2BJ

FOR FIRST TIME USERS...

A new series of books which introduce newcomers to the most widely used micros in the marketplace.

The books assume absolutely no knowledge about computers and the reader is shown even the most fundamental operations such as "switching on" and "loading a program". The books lead the reader through simple programming and then onto graphics, with several programs which show how to achieve pictures and even animation. The books contain a number of specially written programs which show the full potential of these machines.

"The text is liberally supported by all manner of useful diagrams and illustrations (including many black and white photographs of the screen). The overall presentation is excellent. The printing, editing and layout are clear and positively invite the reader to have a go."

EDUCATIONAL COMPUTING

£5.95

(incl postage)



ORDER FORM

SEND OUT BOOKS AND SOFTWARE
to: Peter Cook, Reading Road,
Reading RG2 1AA

24 Hour answering service Tel (0800) 870073

Name

Address

NOW AVAILABLE

Please send me — (tick all at £5.95 each)

incl postage & printing. Offer 14 days for delivery.

- | | |
|---|---|
| <input type="checkbox"/> Learning to Use the 486 Computer | <input type="checkbox"/> Learning to Use the 286 Computer |
| <input type="checkbox"/> Learning to Use the 386 Computer | <input type="checkbox"/> Learning to Use the 386 Computer |
| <input type="checkbox"/> Learning to Use the 386 Computer | <input type="checkbox"/> Learning to Use the 386 Computer |
| <input type="checkbox"/> Learning to Use the 386 Computer | <input type="checkbox"/> Learning to Use the 386 Computer |
| <input type="checkbox"/> Learning to Use the 386 Computer | <input type="checkbox"/> Learning to Use the 386 Computer |
| <input type="checkbox"/> Learning to Use the 386 Computer | <input type="checkbox"/> Learning to Use the 386 Computer |

Make cheques payable to Newtash Publishing Ltd

I enclose my cheque for £

Please debit my Account ☐

Signed Date

READ-OUT

NOV 82



LOOK
FOR THE
'ULTIMATE' NAME
FOR THE
'ULTIMATE' GAMES

JET-PAC

COOKIES

RESUME



TRANS AM

£5.50 each

Do you think you can fall on your feet?

Imagine that you're a
parentage about to be

As you stand on the open deck of the plane, about 10 p.m., you are far below your goal — a small landing pad at the middle of a ranchman's corral.

To land on the mainfield means instant death — and there are strong cross winds which could easily blow you off course. Will you dare to jump?

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

100 per cent satisfaction for 1999

2008-07-01 10:00:00
2008-07-01 10:00:00

200-1000 sq ft
200-2000 sq ft
200-3000 sq ft

100,000 down and more to go, but
in 1994, you can 100,000 down
and 100,000 more to go.

For company with growth
and... for... for...
and... for... for...

a simple, easy-to-use, and
 powerful tool for building
 a powerful application in minutes

NAME _____
DATE _____
TIME _____

100%

100% and 100%

100% and 100%

7700-8877 (2002) 10:10

You may be able to fly through the air with the greatest of ease, but how are you at coming down to earth? You'll find out when you play John Shipman's sky diver game for any Spectrum

[illegible]

9. Wann ist der Mangel zu erwarten?

There are 12 graphics overall, and I have found them all to be

a flag with the word
a flag with full word from the
a flag with full word from the
word

a flag with half mast from the top
 a flag with half mast from the

Plants of the genus
are members of the plant

• The road not taken
• From looking postcard to
• The road not taken

II. state of emergency

☐ **all** rights of expression
☐ **no** restriction of expression
☒ **all** rights of expression

☐ **Technique:** rate of expansion
☐ **Behavior:** variable in expansion
☐ **Technique:** rate of expansion

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	52
--	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	----



```

10 DATA 3,100,200,300,40,500,6
20 DATA 3,7,10,200,300,400,500
30 DATA 0,1,100,100,100,100,10
40 DATA 00,100,200,300,300,30
50 DATA 100,100,100,100,00,100,10
60 DATA 0,0,7,0,10,100,100,10
70 DATA 00,00,100,0,100,00,10
80 DATA 0,0,00,10,10,1,100,10
90 DATA 100,100,100,100,0,7,0
100 DATA 0,00,10,0,0,100,00,00
110 DATA 0,1,0,0,10,00,0,0
120 LET A=INT (RND*100)
130 LET B=INT (RND*100)
140 IF A<B THEN PRINT AT 00,7,
150 1 1 0
160 IF A<B THEN LET A=-1
170 IF A<B THEN B=0
180 IF A<B THEN PRINT A
190 IF A<B THEN B=1
200 IF A<B THEN PRINT A
210 IF A<B THEN B=0
220 IF A<B THEN PRINT A
230 IF A<B THEN B=1
240 IF A<B THEN PRINT A
250 FOR A=0 TO 10
260 FOR B=0
270 PRINT AT 01,0; INK 0;" "
280 NEXT B
290 NEXT A
300 PRINT AT 02,10; INK 0;" "
310 INK 1;0,10; INK 0;" "
320 PRINT AT 03,7; INK 0;" "

```

[illegible]

YEP FOLKS — IT'S HERE

AVAILABLE NOW

Spectrum 48k
Dragon
Com 64

CALIFORNIA

GOLD RUSH



HOWDE DO PARDNERS

This here's Prospector Jake. I sure am havin' one helluva time tryin' to peg ma claim with those damned Injuns a hootin' an' a hollerin' all over this territory. Ma job gets harder as I move from one Gold Field to another. I know, that is me an' ma stubborn homery ol' Mule here know of 24 rich an' I mean rich seams of pure Gold. All it needs to make this here ol' critter happy is that you help me peg every doggone last one of them claims.

Can YOU help Jake become rich, help him peg his claim, dodge the arrows, avoid the tomahawks, and plant the Dynamite in just the right place? . . . YOU CAN!!!

YIPPEE . . . Git yer Picks an' Shovels and join the CALIFORNIA GOLD RUSH . . . NOW

Amazing Arcade Action . . . Stunning Sound and Graphics
Available NOW for Commodore 64, Spectrum 48, and Dragon

£ 7.95 including P&P

SPECIAL OFFER

SPECIAL OFFER

SPECIAL OFFER

Order CALIFORNIA GOLD RUSH before August 14
and get a 10-game Cassette of terrific games . . .

FREE

COMING SOON

LEAPIN' LANCELOT: Medieval Machine Magic to enthrall you
GALACTIC SURVIVAL PAK: Every Astro-Traveller must have this!



We always need Dynamic Dealers
and Imaginative Writers

Please rush me CDR for (x) ()

TOTAL SUM INDICATED £
Please make cheques and P.O.
orders payable to AN&K/Institute
for Entrepreneurial Creativity
BELLINGHAM, WASHINGTON

Name _____

Address _____

VIC-20 PROGRAM

[illegible][illegible]

Word Olympics 32K Atari 400/800 £14.94

Digitals Software, 29 Herton
Road, Farnhill, Manchester
M1 2BA

This is the start of the new educational series of programs packaged from the Atari by Digitals Software. The programs are fun and, it is designed to test the user to a basic skill — in this case, correctly spelling different words by using and a series of anagrams.

The skill level is achieved by choosing a list built up of the same number — graded from "Cleverly guess it in 10 seconds" to "It's the highest number available" — and by choosing the use of the word in the phrase.

The degree of difficulty of each version of the test is

number of letters in each word and is graded from "up to four letters" to "up to eight letters" which is rather hard, especially when trying to sort out words such as "supper" and "flavour". The computer's accompanying program are about the adequate, and since the program is up and running it is very easy to use.

The program appears to be less than enough in two-player mode the control is not as precise and smooth as it would like — perhaps a small benefit from being computer!

Altogether this is a very good addition to Digitals Software's educational series.

instructions	85%
playability	90%
graphics	90%
value for money	85%

★★★★

Animal Anagrams 48K Spectrum £5

Image, 121 Elm Road, New
Maiden, Surrey KT3 1HX

Is it a pun? An educational program? It is a bit of both.

Much of A.A. is drawn, and the limited letters of an animal appear on the windows. It's necessary to call it an anagram because an anagram is a proper word made from the letters of another word.

You have two points at the word. Only the first guess, if correct, counts. If you are wrong the first guess then a clue is given — it

These'll teach you

Learning can be child's play with the aid of your micro, as our reviewers found when they tried out this selection of educational software

word ending given, you get the answer and the next word is displayed.

The sample answers, such as "believe of books on elementary programming", is substituted with animal and some clue phrases — a mouse, "Pond's A.A.", the water running up, next answers, and finally, if you have enough answers, the clue being off and returning with an other phrase.

The mouse is slow in doing

sample that, unless the answer are provided on screen, but the program loaded fine now.

	R.E.
instructions	90%
playability	85%
graphics	95%
value for money	90%

★★★★

Letters and Numbers 48K Spectrum £4.95

Image Software, The Redshift,
Hertford, Hertfordshire,
SG11 2DQ

This is a simple early-learning game program aimed at children aged 1-6 years (1000-100).

The idea is very simple. A list of ten letters appear and four of them are displayed at once at a number of the screen. From the top left of the screen, the letters are chosen by the user.

A small window of ten letters appears in the top right corner, and a small window of ten letters appears in the top right corner.

After each correct answer, the letters are displayed at once at a number of the screen.

The program had a simple in-

ter which contained ten letters and a small window of ten letters.

For further instructions, the program was presented on screen, and a list of ten letters, but the program was not.

The program aimed to help children learn letters and numbers.

A small window of ten letters appears in the top right corner, and a small window of ten letters appears in the top right corner.

A small window of ten letters appears in the top right corner, and a small window of ten letters appears in the top right corner.

A small window of ten letters appears in the top right corner, and a small window of ten letters appears in the top right corner.

A small window of ten letters appears in the top right corner, and a small window of ten letters appears in the top right corner.

A small window of ten letters appears in the top right corner, and a small window of ten letters appears in the top right corner.

A small window of ten letters appears in the top right corner, and a small window of ten letters appears in the top right corner.

A small window of ten letters appears in the top right corner, and a small window of ten letters appears in the top right corner.

A small window of ten letters appears in the top right corner, and a small window of ten letters appears in the top right corner.

A small window of ten letters appears in the top right corner, and a small window of ten letters appears in the top right corner.

A small window of ten letters appears in the top right corner, and a small window of ten letters appears in the top right corner.

A small window of ten letters appears in the top right corner, and a small window of ten letters appears in the top right corner.

A small window of ten letters appears in the top right corner, and a small window of ten letters appears in the top right corner.

Spelling Bee 28K 16K £5

Image Software, 121 Elm Road,
New Maiden, Surrey KT3 1HX

The 28K program is better, and the 16K is aimed at children under the age of six, and the 16K is aimed at children under the age of six.

The graphics are good and very clear, and the program is very easy to use.

The child has one way to play, and the program is very easy to use.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

But with a 28K, there is a more advanced level.

For all the words, the program is very easy to use.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

Identikit 48K Spectrum £5.95

Soft Software, 28 Elmfield
Avenue, Walsley, Lancs

This is a lovely program for the Spectrum, and it is based on the

idea of a game which tests your knowledge of famous people.

You have a choice of two

ways to play, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

The program is very easy to use, and the graphics are good.

Solar Software

37 Woodcroft, Redditch
Worcestershire B96 3JP
Tel 061 224 8622

Quality arcade action games for the VIC 20 & COMMODORE 64 CBM 64

GALAXIONS The earth is being invaded by an alien force, the GALAXIONS have arrived from a dying planet determined to destroy civilization as we know it. They come in formation, swooping and diving towards the planet earth. You and you alone can save mankind from the terrifying destruction the aliens threaten us with.

100% Machine Code
3 Lives

Bonus ship at 10000
Progressive levels of play



£7.95

much man 64 A fantastic version of the popular arcade game

100% Machine Code
3 Lives, Bonus fruit
Power pills

4 Very intelligent ghosts



£7.95

UNEXPANDED VIC 20

Super Shootout	100% M/C	£5.00
Scramble	100% M/C	£5.00
much man	100% M/C	£5.00
GALAXIONS	100% M/C	£5.00
GUN FIGHT	100% M/C	£5.00
ASTEROIDS	100% M/C	£5.00
Barrel Blaster	100% M/C	£6.00

B & 16K EXPANDED VIC 20

COMIC HEROES	100% M/C	£9.95
-----------------	----------	-------

All our games are available mail order P&P included from the above address. Orders sent by return post. Also available from all good computer shops.

Distribution, PROGRESSIVE London,
P.C.S. Darwen, CENTRE SOFT West Midlands
EXPORT INQUIRIES WELCOME

Silverlind

SILVERLIND LTD, The Newton Trust, Buntingford Town
Suffolk, CB26 0PB Tel 02263 42667

SHOOT MATHE £10.00
A suite of 6 programs most suited for the 5-14 year age range and ideal for use in the classroom. Encourages use of colour and natural sound module (internal and external).

11Tales Multiphaser is a fiction. The computer uses facts in a moving way (the 11 stories below) or can use facts as specified up to the 66 pages table. Introduces the solving of equations with 6 levels of difficulty.

11Phases Expresses the common polygons and associates with names, special structure being given to triangles and quadrilaterals. Pupils are then tested on their understanding.

11Lines Teaches how to find the area of irregular shapes, rectangles, parallelograms and triangles and tests pupils' understanding.

When appropriate, results are stored for later evaluation. By soft and other important screen displays can be printed if required.

TOPNIGHT £10.00
A very useful aid for teaching Geography in primary schools. This program lists details (longitude and the locations of major rivers and cities in England, Scotland and Wales. Well presented, with a high resolution map.

BIOLOGY £10.00
A suite of programs using very coloured diagrams, examples, and questions (a) based on the understanding of Biology to DNA, (b) and (c) Level standards. Most suited to individual use by students, these programs also represent material tests are set against the classroom. The program 'Biology' covers the Eye, Ear, Heart, Blood and Circulation, Digestion, Excretion, Reproduction, Genetics, Biochemistry and the Central Nervous System.

ALL PRICES INCLUDE POST & PACKING & VAT

TI-99/4A SOFTWARE

PILOT £5.95

A good one flight simulator game for the unexpanded TI-99/4A. Graphics display of landing area and terrain map, plus realistic in-program sound. Options for day/night, landing or in flight, full control stick included. Graphics and sound.

TI TREK £5.95

Follow the Klingon invasion fleet. Features include 3 rail battle, graphics oriented display, galaxy map, phasers, photon torpedoes, iona ring, screen, damage report, shield control, impulse and warp drive. Sight by sight galaxy. Full instructions included. Graphics and sound.

Send cheque or P.O. or telephone with Access/Trade for immediate dispatch. Please add 50p p.p. to orders under £7.

Order over £7 post free

APEX SOFTWARE

Seix Courtage, Hastings Road,
St. Leonards-on-Sea, TN38 8BA
Tel: Hastings (0424) 31175

THE

MEGA RUN

... is coming

TI-99/4A PROGRAM

```

880 FOR I=1 TO LEN(S)-
900 CALL HCHAR(I,1,ASC(CEGS(I)-
1,1))
910 NEXT I
920 FOR I=1 TO LEN(CS)-
930 CALL HCHAR(I,16,ASC(CEGS(CS-
1,1)))
940 NEXT I
950 CALL KEY(K,J)
960 IF S=0 THEN 950
970 CALL CLEAR
980 IF K=ASC("Y") THEN 1000
990 IF K=ASC("N") THEN 1180 ELSE
950
1000 CALL CLEAR
1010 I=-1
1020 R=5
1030 GOSUB 1110
1040 I=-1
1050 R=10
1060 GOSUB 1110
1070 I=-1
1080 R=13
1090 GOSUB 1110
1100 GOTO 1180
1110 FOR I=1 TO LEN(I$)
1120 CALL HCHAR(I,1,ASC(CEGS(I,
I-1)))
1130 NEXT I
1140 FOR I=1 TO 200
1150 NEXT I
1160 CALL CLEAR
1170 RETURN
1180 RESTORE 1230
1190 FOR I=100 TO 115
1200 READ M$
1210 CALL CHAR(I,M$)
1220 NEXT I
1230 DATA FFFFFFFFFFFFFFFF,7F3F3
92C8727491,F8FC9C32E1E29408,FF82
F4081F3C7FFC,FF412F10F83CFE3F,F8
F0F0F8FCDFFFFF
1240 DATA 0085EFFFFFFFFF,24842
424242DBFF,0F1F0F3F3FFF,008
0C0E0F0F0F,010303010103070F,F
F1024429924C324
1250 CALL COLOR(10,13,2)
1260 CALL COLOR(11,13,2)
1270 MISS=4
1280 SC=-10
1290 C=16
1300 GOSUB 2070
1310 GOSUB 2130
1320 END: HCHAR(24,1,104,32)

```

Page 31. HOME COMPUTING WEEK in October 1981

TI-99/4A PROGRAM

```

1330 CALL HCHAR(23,1,104)
1340 CALL HCHAR(23,32,104)
1350 CALL HCHAR(23,2,109)
1360 CALL HCHAR(23,31,112)
1370 CALL HCHAR(23,4,111,26)
1380 CALL HCHAR(23,4,115,26)
1390 CALL HCHAR(22,1,104)
1400 CALL HCHAR(22,2,113)
1410 CALL HCHAR(21,1,113)
1420 CALL HCHAR(22,31,114)
1430 CALL HCHAR(22,32,104)
1440 CALL HCHAR(21,32,114)
1450 CALL HCHAR(22,3,107)
1460 CALL HCHAR(22,38,108)
1470 CALL CHAR(144,"000018243C7E
FF3C")
1480 CALL CHAR(145,"423C66FF7E24
42")
1490 CALL COLOR(15,11,2)
1500 CALL CHAR(152,"101008081010
0808")
1510 CALL CHAR(153,"001004164804
1")
1520 CALL CHAR(154,"482488946214
2982")
1530 CALL CHAR(155,"088229548348A
44")
1540 CALL COLDP(16,16,2)
1550 NU=44
1560 FOR I=7 TO 27 STEP 2
1570 CALL HCHAR(6,1,145)
1580 CALL HCHAR(9,1,100)
1590 CALL HCHAR(12,1,38)
1600 CALL HCHAR(15,1,66)
1610 NEXT I
1620 CALL HCHAR(21,C,144)
1630 CALL KEY(0,K,S)
1640 IF S=0 THEN 1630
1650 IF MISS=0 THEN 2190
1660 IF NU=0 THEN 1550
1670 IF K=83 THEN 1700
1680 IF K=48 THEN 1780
1690 IF K=46 THEN 1850
1700 C=C+1
1710 CALL HCHAR(21,C,144)
1720 CALL HCHAR(21,C+1,32)
1730 IF C=4 THEN 1760
1740 GOTO 1630
1750 GOTO 1630
1760 C=4
1770 GOTO 1630
1780 C=C+1
1790 CALL HCHAR(21,C,144)
1800 CALL HCHAR(21,C-1,32)
1810 IF C=29 THEN 1830
1820 GOTO 1630
1830 C=29

```

```

1840 GOTO 1630
1850 FOR I=20 TO 4 STEP -1
1860 CALL HCHAR(1,C,55)
1870 IF S=C/32 THEN 1930
1880 CALL HCHAR(1,C,152)
1890 CALL HCHAR(1,C,32)
1900 IF I=4 THEN 2050
1910 NEXT I
1920 GOTO 1630
1930 CALL HCHAR(1,C,32)
1940 FOR G=153 TO 155
1950 CALL HCHAR(1,C,6)
1960 NEXT G
1970 FOR G=155 TO 153 STEP -1
1980 CALL SOUND(-200,-7,0)
1990 CALL HCHAR(1,C,6)
2000 NEXT G
2010 CALL HCHAR(1,C,32)
2020 NU=NU-1
2030 GOSUB 2130
2040 GOTO 1630
2050 GOSUB 2070
2060 GOTO 1630
2070 MISS=MISS+1
2080 LS=" LIVE! "STR$(MISS)
2090 FOR I=1 TO LEN(LS)
2100 CALL HCHAR(1,I+ASC(56),LS
I,133)
2110 NEXT I
2120 RETURN
2130 SC=SC+10
2140 S$=" SCOUT "STR$(SC)
2150 FOR K=1 TO LEN(S$)
2160 CALL HCHAR(3,K+ASC(56),S$
K,133)
2170 NEXT K
2180 RETURN
2190 CALL HCHAR(21,C,32)
2200 FOR I=6 TO 30
2210 CALL SOUND(-200,110,(I-7,1)
2220 NEXT I
2230 CALL SOUND(-10,3000,10)
2240 RS=" ANOTHER GAME ?
OR N"
2250 FOR I=1 TO LEN(RS)
2260 CALL HCHAR(16,I+ASC(56),RS
I,133)
2270 NEXT I
2280 CALL KEY(0,I,C)
2290 CALL HCHAR(2,1,32,32)
2300 IF C=0 THEN 2280
2310 IF I=ASC("Y") THEN 2380
2320 IF I=ASC("N") THEN 2340 ELSE
2330
2340 CALL HCHAR(12,1,32,32)
2350 GOTO 1270
2360 CALL CLEAR
2370 END

```

Top Ten programs for the Dragon

- | | | |
|----|--------------------------|-------------------|
| 1 | King of Dragons | Microsoft (10) |
| 2 | Dragon | Microsoft (10) |
| 3 | Android Attack | Microsoft (11) |
| 4 | Prolog | Quicksilver (1-1) |
| 5 | Marble Out | Microsoft (1-1) |
| 6 | Outbreak: Guts With Guns | Microsoft (2) |
| 7 | Smile | Microsoft (2) |
| 8 | The King | Microsoft (2) |
| 9 | Space War | Prolog (1-1) |
| 10 | Chess | |

Compiled by Becta. Figures in brackets are last week's positions.

Top Ten programs for the ZX81

- | | | |
|----|-------------------|------------------|
| 1 | Flight Simulation | Smile (1) |
| 2 | Space Raiders | Smile (2) |
| 3 | Coverage Island | Smile (3) |
| 4 | UK Games | Smile (1-1) |
| 5 | Tetris | Smile (1-1) |
| 6 | Defender | Quicksilver (10) |
| 7 | Smile | Quicksilver (2) |
| 8 | Football Manager | Addict (2) |
| 9 | Ship of Doom | Smile (4) |
| 10 | Chess | Smile (5) |

Compiled by Becta. Figures in brackets are last week's positions.

Top Ten programs for the Spectrum

- | | | |
|----|-----------------------|------------------------|
| 1 | Scrabble | Pison (1) |
| 2 | Jai Pai | Ultimate (3) |
| 3 | The Hobbit | Melbourne House (2) |
| 4 | Flight Simulation | Pison (4) |
| 5 | Trump-Air | Ultimate (5) |
| 6 | Horace and the Golden | Pison/M. House (2) |
| 7 | Horace Goes Skating | Pison/M. House (3) |
| 8 | Super Spy | Richard Shepherd (8) |
| 9 | 3D Desert Patrol | Computer Research (10) |
| 10 | Ali Gidiang | Imagica (7) |

Compiled by H. H. Smith. Figures in brackets are last week's positions.

Top Ten for the VIC-20 and Commodore 64

- | | | |
|----|-------------------------------|------------------|
| 1 | Avast! (VIC) | Imagica (1) |
| 2 | Wizard and the Princess (VIC) | Imagica (1-1) |
| 3 | Howr (Commodore 64) | Imagica (2) |
| 4 | Quadrant (VIC) | Imagica (1-1) |
| 5 | Prolog (64) | Quicksilver (10) |
| 6 | Smile (VIC) | Imagica (2) |
| 7 | Wacky Western (VIC) | Imagica (1-1) |
| 8 | Knight King (64) | |
| 9 | Attack of the Mutant | Imagica (1-1) |
| 10 | Chess (64) | Smile (1-1) |

Compiled by Becta. Figures in brackets are last week's positions.

U.S. SCENE

Fly me . . . without a computer

Frank this is out of the former team of the left hand, not knowing what the right hand is doing — computer bugs, hardware designs. I hope Becta data was just a way to say it.

Apparently they have been much too busy about the use of portable computers aboard planes. Apparently some of these bugs are thought to be causing or contributing to problems with engine navigation and communication equipment.

Some portable are being banned from use on commercial, all portable are being banned on others. The Federal Aviation Association (FAA) is now looking into these issues. The issue is certainly not much any more serious, the Federal Communications Commission, which regulates the ultimate national emissions from computers, are a Class B interference standard which is very close to the level of signals used in airplanes.

Even more done by the Canadian Department of Transport revealed that an electronic calculator interfered with the navigation system of a helicopter when held in close proximity to it (computers generate more interference than calculators). The which case is now under investigation.

Meanwhile up in Canada, Canadian Pacific Air, of Vancouver, British Columbia, has started installation of new star self-contained video games on board flights between Vancouver and Amsterdam. The big difference, however, is that the games are in crystal display and not video display units, which also cause trouble in the cockpit. And the units are very little power, which also tends to lower the danger of interference may be reduced.

One of the units used in Germany a previous study conducted by an independent research agency. The 12-page report gave the unit, called 'Laplace', a class 10 of health. Even so, plans are underway to introduce more variable, and therefore more powerful, on-board units.

It is likely that, in the case of the U.S. studies, much more will be done before such units are introduced. I certainly hope so.

★ ★ ★ ★

Two new and interesting pieces of hardware for the VIC-20. Promag is being advertised as a very interesting ROM development system. It is basically an EPROM programmer in cartridge form. Use of this device allows you to type in your program on the keyboard directly into a 4K ROM emulator.

You can then test your program in circuit, after which you can directly burn an EPROM using the device's programmer and power supply. It comes with a 25 page user manual and fits the expansion port, leaving the user port free. The cost of the device is about \$199 plus shipping and handling.

From the same company comes a low cost network controller compatible with all Commodore PETs and the VIC-20. Petnet provides the capacity to transfer files and programs to and from a central computer to up to 16 satellite computer work stations. Requiring no special software, the unit does not interfere with normal communications port usage, and may be installed. Carrying an approximate price of \$225, this device may be readily applied in classroom and other similar situations. Details on both this, the Promag, and other products for the VIC-20 can be obtained from Petnet Research, Denver 1786-P; Petnet CA 94138, (415) 551-5155. All products come with a 30-day trial and a six month warranty.

One of room again. See you next week.

Real Time
Fairfield, California

ANIROG SOFTWARE

COMMODORE 64

SKRAMBLE

K.B. 1.5 0.75

HEXPRT

K.B. 0.75

MOON BUGGY

K.B. 0.75

DUNGEONS

K.B. 0.75

3D TIME TREK

K.B. 0.75

FROG RUN

K.B. 1.5 0.75

SPECTRUM

MISSILE DEFENCE

K.B. 0.5

0.75

FAMILY FUN

KONG - 64

K.B. 1.1 0.75

KONG - SPECTRUM

K.B. 1.1 0.75

KRAZY KONG

K.B. 1.1 0.75

VIC 20 (16K)

MINI KONG

K.B. 1.1 0.75

VIC 20(UNEXP)

ANIROG SOFTWARE

94/96 CREDIT CARD SALES HORNLEY ROAD/1000
PAYMENT BY CHEQUE, P.O., ACCESS/VISA
8 HIGH STREET HORNLEY, SURREY
Overseas 50p post & packaging

TRADE ENQUIRIES WELCOME

29 West Hill, Dartford, Kent. 032231821/3/8

Smooth, flicker-free animation can be yours with these two-machine code routines — and a short BASIC program — to generate, move and display all frames.

Each frame can be a picture or text or a mixture of both and all 48 are displayed in under two seconds.

Listing 1 starts at location 30000 in RAM, though it can go anywhere suitable you like. When the routine is called the image on the screen is stored in RAM.

Listing 2 starts at location 30100. When it is called the information stored in RAM is sent to the screen.

Each routine makes use of the LDR machinecode in which a block of bytes is copied from one area of memory to another.

As a guide, the assembler listing is given to the right of both routines. The HL register pair holds the base address, the DE pair the destination and the BC pair the number of bytes to be copied.

How they work

Listing 1

The routine above stores the display file (30000-30039) and the picture on the screen. It can be overwritten. To allow for this, two bytes — one moving to the 'out' — are used.

One byte is a 4-bit register as a 4-bit register and 4-bit register and one location 30000 and 30001.

The other two bytes are the 8-bit register and 8-bit register from location 30010 and 30011.

Changing the value of the two registers on 30010 and 30011 can give branching of the code.

Location 30000 holds the destination address. As each frame is created and stored, the contents of this location will be correct. When ready, the contents of the display file (30000-30039) and the picture on the screen will be correct. This is done in the BASIC program, line 100.

In the first listing the base address of the display file (the screen picture) and the destination address is 16 free memory to RAM.

In the second listing the base address is in RAM and the destination address in the display file (16 free memory to RAM).

It is very easy to make each frame the same size as the screen. But this would mean that each frame would occupy 3440 bytes — 32 columns of 32 lines by eight.

Since there are approximately 34000 bytes available in RAM to store the frames, only six frames would be possible.

So to increase the number of frames available I have made them smaller.

Make your own flicker-free movies

Try these machine code routines in your own programs for smooth animation. Ian McDonald wrote them and explains their use on the 48K Spectrum



Each frame is a rectangle in the centre of the screen whose co-ordinates are (0,0), (40,10), (70,40), (70,110).

The colours are in hexadecimal and can be entered any way you like, either directly, or by using READ, DATA and POKE statements.

After you have entered the two routines you cannot then by carrying out the following:

● Fill up the screen with text. A quick way is with a short BASIC program, LISTED several lines.

● RANDOMIZE USE 30000. The screen will lose the image, but the 'frames' in the middle should survive stored in RAM from location 30000 on.

● CLS to clear the screen.

● RANDOMIZE USE 30000. The routine in the middle of the screen should now be full of your text.

If it all works all right type in

Listing 1, the BASIC program. When this is RUN you will see a circle on the centre-left of the screen. It will disappear and then reappear slightly to the right 40 times.

Then you should see the circle move smoothly from left to right over and over again. Press STOP and BREAK when you're bored.

The size of the frame is easily changed by altering the value in locations 30009, 30014 and 30020.

The values of 30009 and 30014 should add up to 32 bytes. Because one line of screen picture uses 32 bytes.

If you change the value in location 30009, you must also change the value in location 30014. This applies to changes of any value.

The number of bytes used for each frame is equal to the number of columns across multiplied by the number of rows up. As you increase the size of each frame, you increase the number of bytes per frame, thus decreasing the number of frames possible.

Listing 1

The following program creates 48 frames.

● It starts at 30000.
● The 48 frames in RAM are created.
● In 30010, the DE pair is set to 30000 and the HL pair.

● Routine 30010 calls the first routine. As each frame is shown, the contents of the address that is pointed to by DE. This is done in line 200 of the BASIC program.

The size of the STOR is less than 100 and 200 is equal to the number of bytes per frame divided by 32. In the result of the division is not a whole number, location 30009 and 30014 will also need POKEing.

The formula given on page 173 of the Spectrum manual could be useful in working out the values to be POKE'd.

Listing 2

30000 and 30010 are the start address for each frame.

30010, 30011, 30012 are the start address of the first frame. 30010 is the value of the contents of 30010 is moved to the 30010, 30011, 30012, 30013, 30014, 30015, 30016, 30017, 30018, 30019, 30020, 30021, 30022, 30023, 30024, 30025, 30026, 30027, 30028, 30029, 30030, 30031, 30032, 30033, 30034, 30035, 30036, 30037, 30038, 30039, 30040, 30041, 30042, 30043, 30044, 30045, 30046, 30047, 30048, 30049, 30050, 30051, 30052, 30053, 30054, 30055, 30056, 30057, 30058, 30059, 30060, 30061, 30062, 30063, 30064, 30065, 30066, 30067, 30068, 30069, 30070, 30071, 30072, 30073, 30074, 30075, 30076, 30077, 30078, 30079, 30080, 30081, 30082, 30083, 30084, 30085, 30086, 30087, 30088, 30089, 30090, 30091, 30092, 30093, 30094, 30095, 30096, 30097, 30098, 30099, 30100, 30101, 30102, 30103, 30104, 30105, 30106, 30107, 30108, 30109, 30110, 30111, 30112, 30113, 30114, 30115, 30116, 30117, 30118, 30119, 30120, 30121, 30122, 30123, 30124, 30125, 30126, 30127, 30128, 30129, 30130, 30131, 30132, 30133, 30134, 30135, 30136, 30137, 30138, 30139, 30140, 30141, 30142, 30143, 30144, 30145, 30146, 30147, 30148, 30149, 30150, 30151, 30152, 30153, 30154, 30155, 30156, 30157, 30158, 30159, 30160, 30161, 30162, 30163, 30164, 30165, 30166, 30167, 30168, 30169, 30170, 30171, 30172, 30173, 30174, 30175, 30176, 30177, 30178, 30179, 30180, 30181, 30182, 30183, 30184, 30185, 30186, 30187, 30188, 30189, 30190, 30191, 30192, 30193, 30194, 30195, 30196, 30197, 30198, 30199, 30200, 30201, 30202, 30203, 30204, 30205, 30206, 30207, 30208, 30209, 30210, 30211, 30212, 30213, 30214, 30215, 30216, 30217, 30218, 30219, 30220, 30221, 30222, 30223, 30224, 30225, 30226, 30227, 30228, 30229, 30230, 30231, 30232, 30233, 30234, 30235, 30236, 30237, 30238, 30239, 30240, 30241, 30242, 30243, 30244, 30245, 30246, 30247, 30248, 30249, 30250, 30251, 30252, 30253, 30254, 30255, 30256, 30257, 30258, 30259, 30260, 30261, 30262, 30263, 30264, 30265, 30266, 30267, 30268, 30269, 30270, 30271, 30272, 30273, 30274, 30275, 30276, 30277, 30278, 30279, 30280, 30281, 30282, 30283, 30284, 30285, 30286, 30287, 30288, 30289, 30290, 30291, 30292, 30293, 30294, 30295, 30296, 30297, 30298, 30299, 30300, 30301, 30302, 30303, 30304, 30305, 30306, 30307, 30308, 30309, 30310, 30311, 30312, 30313, 30314, 30315, 30316, 30317, 30318, 30319, 30320, 30321, 30322, 30323, 30324, 30325, 30326, 30327, 30328, 30329, 30330, 30331, 30332, 30333, 30334, 30335, 30336, 30337, 30338, 30339, 30340, 30341, 30342, 30343, 30344, 30345, 30346, 30347, 30348, 30349, 30350, 30351, 30352, 30353, 30354, 30355, 30356, 30357, 30358, 30359, 30360, 30361, 30362, 30363, 30364, 30365, 30366, 30367, 30368, 30369, 30370, 30371, 30372, 30373, 30374, 30375, 30376, 30377, 30378, 30379, 30380, 30381, 30382, 30383, 30384, 30385, 30386, 30387, 30388, 30389, 30390, 30391, 30392, 30393, 30394, 30395, 30396, 30397, 30398, 30399, 30400, 30401, 30402, 30403, 30404, 30405, 30406, 30407, 30408, 30409, 30410, 30411, 30412, 30413, 30414, 30415, 30416, 30417, 30418, 30419, 30420, 30421, 30422, 30423, 30424, 30425, 30426, 30427, 30428, 30429, 30430, 30431, 30432, 30433, 30434, 30435, 30436, 30437, 30438, 30439, 30440, 30441, 30442, 30443, 30444, 30445, 30446, 30447, 30448, 30449, 30450, 30451, 30452, 30453, 30454, 30455, 30456, 30457, 30458, 30459, 30460, 30461, 30462, 30463, 30464, 30465, 30466, 30467, 30468, 30469, 30470, 30471, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30485, 30486, 30487, 30488, 30489, 30490, 30491, 30492, 30493, 30494, 30495, 30496, 30497, 30498, 30499, 30500, 30501, 30502, 30503, 30504, 30505, 30506, 30507, 30508, 30509, 30510, 30511, 30512, 30513, 30514, 30515, 30516, 30517, 30518, 30519, 30520, 30521, 30522, 30523, 30524, 30525, 30526, 30527, 30528, 30529, 30530, 30531, 30532, 30533, 30534, 30535, 30536, 30537, 30538, 30539, 30540, 30541, 30542, 30543, 30544, 30545, 30546, 30547, 30548, 30549, 30550, 30551, 30552, 30553, 30554, 30555, 30556, 30557, 30558, 30559, 30560, 30561, 30562, 30563, 30564, 30565, 30566, 30567, 30568, 30569, 30570, 30571, 30572, 30573, 30574, 30575, 30576, 30577, 30578, 30579, 30580, 30581, 30582, 30583, 30584, 30585, 30586, 30587, 30588, 30589, 30590, 30591, 30592, 30593, 30594, 30595, 30596, 30597, 30598, 30599, 30600, 30601, 30602, 30603, 30604, 30605, 30606, 30607, 30608, 30609, 30610, 30611, 30612, 30613, 30614, 30615, 30616, 30617, 30618, 30619, 30620, 30621, 30622, 30623, 30624, 30625, 30626, 30627, 30628, 30629, 30630, 30631, 30632, 30633, 30634, 30635, 30636, 30637, 30638, 30639, 30640, 30641, 30642, 30643, 30644, 30645, 30646, 30647, 30648, 30649, 30650, 30651, 30652, 30653, 30654, 30655, 30656, 30657, 30658, 30659, 30660, 30661, 30662, 30663, 30664, 30665, 30666, 30667, 30668, 30669, 30670, 30671, 30672, 30673, 30674, 30675, 30676, 30677, 30678, 30679, 30680, 30681, 30682, 30683, 30684, 30685, 30686, 30687, 30688, 30689, 30690, 30691, 30692, 30693, 30694, 30695, 30696, 30697, 30698, 30699, 30700, 30701, 30702, 30703, 30704, 30705, 30706, 30707, 30708, 30709, 30710, 30711, 30712, 30713, 30714, 30715, 30716, 30717, 30718, 30719, 30720, 30721, 30722, 30723, 30724, 30725, 30726, 30727, 30728, 30729, 30730, 30731, 30732, 30733, 30734, 30735, 30736, 30737, 30738, 30739, 30740, 30741, 30742, 30743, 30744, 30745, 30746, 30747, 30748, 30749, 30750, 30751, 30752, 30753, 30754, 30755, 30756, 30757, 30758, 30759, 30760, 30761, 30762, 30763, 30764, 30765, 30766, 30767, 30768, 30769, 30770, 30771, 30772, 30773, 30774, 30775, 30776, 30777, 30778, 30779, 30780, 30781, 30782, 30783, 30784, 30785, 30786, 30787, 30788, 30789, 30790, 30791, 30792, 30793, 30794, 30795, 30796, 30797, 30798, 30799, 30800, 30801, 30802, 30803, 30804, 30805, 30806, 30807, 30808, 30809, 30810, 30811, 30812, 30813, 30814, 30815, 30816, 30817, 30818, 30819, 30820, 30821, 30822, 30823, 30824, 30825, 30826, 30827, 30828, 30829, 30830, 30831, 30832, 30833, 30834, 30835, 30836, 30837, 30838, 30839, 30840, 30841, 30842, 30843, 30844, 30845, 30846, 30847, 30848, 30849, 30850, 30851, 30852, 30853, 30854, 30855, 30856, 30857, 30858, 30859, 30860, 30861, 30862, 30863, 30864, 30865, 30866, 30867, 30868, 30869, 30870, 30871, 30872, 30873, 30874, 30875, 30876, 30877, 30878, 30879, 30880, 30881, 30882, 30883, 30884, 30885, 30886, 30887, 30888, 30889, 30890, 30891, 30892, 30893, 30894, 30895, 30896, 30897, 30898, 30899, 30900, 30901, 30902, 30903, 30904, 30905, 30906, 30907, 30908, 30909, 30910, 30911, 30912, 30913, 30914, 30915, 30916, 30917, 30918, 30919, 30920, 30921, 30922, 30923, 30924, 30925, 30926, 30927, 30928, 30929, 30930, 30931, 30932, 30933, 30934, 30935, 30936, 30937, 30938, 30939, 30940, 30941, 30942, 30943, 30944, 30945, 30946, 30947, 30948, 30949, 30950, 30951, 30952, 30953, 30954, 30955, 30956, 30957, 30958, 30959, 30960, 30961, 30962, 30963, 30964, 30965, 30966, 30967, 30968, 30969, 30970, 30971, 30972, 30973, 30974, 30975, 30976, 30977, 30978, 30979, 30980, 30981, 30982, 30983, 30984, 30985, 30986, 30987, 30988, 30989, 30990, 30991, 30992, 30993, 30994, 30995, 30996, 30997, 30998, 30999, 31000, 31001, 31002, 31003, 31004, 31005, 31006, 31007, 31008, 31009, 31010, 31011, 31012, 31013, 31014, 31015, 31016, 31017, 31018, 31019, 31020, 31021, 31022, 31023, 31024, 31025, 31026, 31027, 31028, 31029, 31030, 31031, 31032, 31033, 31034, 31035, 31036, 31037, 31038, 31039, 31040, 31041, 31042, 31043, 31044, 31045, 31046, 31047, 31048, 31049, 31050, 31051, 31052, 31053, 31054, 31055, 31056, 31057, 31058, 31059, 31060, 31061, 31062, 31063, 31064, 31065, 31066, 31067, 31068, 31069, 31070, 31071, 31072, 31073, 31074, 31075, 31076, 31077, 31078, 31079, 31080, 31081, 31082, 31083, 31084, 31085, 31086, 31087, 31088, 31089, 31090, 31091, 31092, 31093, 31094, 31095, 31096, 31097, 31098, 31099, 31100, 31101, 31102, 31103, 31104, 31105, 31106, 31107, 31108, 31109, 31110, 31111, 31112, 31113, 31114, 31115, 31116, 31117, 31118, 31119, 31120, 31121, 31122, 31123, 31124, 31125, 31126, 31127, 31128, 31129, 31130, 31131, 31132, 31133, 31134, 31135, 31136, 31137, 31138, 31139, 31140, 31141, 31142, 31143, 31144, 31145, 31146, 31147, 31148, 31149, 31150, 31151, 31152, 31153, 31154, 31155, 31156, 31157, 31158, 31159, 31160, 31161, 31162, 31163, 31164, 31165, 31166, 31167, 31168, 31169, 31170, 31171, 31172, 31173, 31174, 31175, 31176, 31177, 31178, 31179, 31180, 31181, 31182, 31183, 31184, 31185, 31186, 31187, 31188, 31189, 31190, 31191, 31192, 31193, 31194, 31195, 31196, 31197, 31198, 31199, 31200, 31201, 31202, 31203, 31204, 31205, 31206, 31207, 31208, 31209, 31210, 31211, 31212, 31213, 31214, 31215, 31216, 31217, 31218, 31219, 31220, 31221, 31222, 31223, 31224, 31225, 31226, 31227, 31228, 31229, 31230, 31231, 31232, 31233, 31234, 31235, 31236, 31237, 31238, 31239, 31240, 31241, 31242, 31243, 31244, 31245, 31246, 31247, 31248, 31249, 31250, 31251, 31252, 31253, 31254, 31255, 31256, 31257, 31258, 31259, 31260, 31261, 31262, 31263, 31264, 31265, 31266, 31267, 31268, 31269, 31270, 31271, 31272, 31273, 31274, 31275, 31276, 31277, 31278, 31279, 31280, 31281, 31282, 31283, 31284, 31285, 31286, 31287, 31288, 31289, 31290, 31291, 31292, 31293, 31294, 31295, 31296, 31297, 31298, 31299, 31300, 31301, 31302, 31303, 31304, 31305, 31306, 31307, 31308, 31309, 31310, 31311, 31312, 31313, 31314, 31315, 31316, 31317, 31318, 31319, 31320, 31321, 31322, 31323, 31324, 31325, 31326, 31327, 31328, 31329, 31330, 31331, 31332, 31333, 31334, 31335, 31336, 31337, 31338, 31339, 31340, 31341, 31342, 31343, 31344, 31345, 31346, 31347, 31348, 31349, 31350, 31351, 31352, 31353, 31354, 31355, 31356, 31357, 31358,

SPECTRUM PROGRAMMING

```

30000 39 0 73 LD HL, display file
30003 17 0 125 LD DE,32,000
30006 02 0 LD A,0
30009 1 12 0 LD BC,12
30011 257 175 LDIR
30013 0 59 LD B,30
30016 38 INC HL
30019 15 225 DJNZ
30021 60 INC A
30024 254 64 CP 64
30027 56 241 JRC
30030 201 RET
    
```

Listing 1 — stores frame in RAM. The memory locations are the first-figure numbers on the left and the assembler listing is in letters on the right. They should not be typed in.

```

30100 33 0 125 LD HL,30000
30103 17 10 73 LD DE,display file
30106 02 0 LD A,0
30109 1 12 0 LD BC,12
30111 257 175 LDIR
30113 0 20 LD B,30
30116 38 INC DE
30119 15 255 DJNZ
30121 60 INC A
30124 254 64 CP 64
30127 56 241 JRC
30130 201 RET
    
```

Listing 2 — pairs frame on screen. Do not type in the memory locations or the assembler.



```

1. PAPER 1. SOUNDS 8. TKN 7. P
RIGHT 3 CLS. PRINT AT 18,0,"P
ROM 1. UNIT-HOME LOADING TO COME
2. LOAD "ROMS 30000,300
3. CLS. PRINT AT 18,0,"ON - AW
EDD ANY KEY TO CONTINUE"
4. PAPER 8. CLS
5. LET B1=30000
6. LET B2=30100
7. LET CX=00
8. LET CV=00
9. LET T=00
10. FOR P=100 TO 251 STEP 3
11. FOR B1=1
12. CIRCLE CV,CV,
13. RANDOMIZE USR 30000
14. CV=
15. NEXT B1
16. CHECKED
17. NEXT P
18. FOR P=100 TO 251 STEP 3
19. FOR B2=1
20. RANDOMIZE USR 30100
21. NEXT B2
22. GO TO 800
    
```

Listing 3 — a BASIC program showing how the two machine code routines can be used.

CALIFORNIA GOLD RUSH



HOWERE PARTNERS

This here's Prospector Jake. I sure am havin' one helluva time tryin' to peg my claim with them luge-n' a hoot-a' and a holler-a' all over this here territory.

Can YOU help Jake peg his claim, digge the mine, avoid the tomahawks, n' plant his Dynamite? You CAN!!

YIPPEE ... You need all your skill & CALIFORNIA GOLD RUSH ... NOW for DOM 64, Spectrum 48, & Dragon

Amazing Arcade Action for £7.95 incl

SPECIAL OFFER Order California Gold Rush NOW and get a 10 game cassette **ABSOLUTELY FREE**



10 KINGSFORD COURT
WILLING, BOSTONHAMPTON

THE NEW 100% CASH INVESTMENT
PLAN FOR YOUR FUTURE
10% 20% 30% 40% 50% 60% 70% 80% 90% 100%



YAHTZEE... This traditional dice is for one or more players and features superb graphics to enhance your enjoyment. YAHTZEE is Fascinating, Absorbing & Challenging.

SPECIAL OFFER

Order YAHTZEE Today for only £7.95 incl and get a free game cassette FREE.



10 KINGSFORD COURT
WILLING, BOSTONHAMPTON

THE NEW 100% CASH INVESTMENT
PLAN FOR YOUR FUTURE
10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Harrier Attack oric-1 £9.95

David, Castle Lodge, Castle
Green, Tunstall T64 4AB

In this immediately game, you control a Harrier aircraft in an attack on an enemy-controlled island.

You have to take off from an aerial carrier, and fly towards the island.

Paradise coast, enemy aircraft, and that are the five hazards you will encounter.

From there on, the enemy will attack you in several ways, while you attempt to destroy the four enemies, in three different ways.

On the way, you pick up points depending on enemy aircraft and equipment.

And you have to keep a check on fuel, health and rocket levels, as well as a safe return to the sea.

In spite and appearance, the

game is composed of simple missions of 30 seconds. There are five levels of difficulty, hard to complete.

The use of colour and sound is good. One feature I thought was excellent was the facility to adjust the sound volume.

Some of the graphics are odd. When you fly through the smoke about half by risk, your Harrier doesn't disappear when it should and when a rocket is fired, everything stops moving for a moment.

It's a pity the machine code program is stored in Oric's slow speed mode — a task it is performing 10 minutes too late. However, the playable game was excellent with

microcomputer	100%
playability	100%
graphics	100%
value for money	100%

★★★★★

Bandits at 3 o'clock BBC £9.95

Program Power, 37-38 Regent St
Chapel Ardenne, Leeds

Computer games can be fairly tedious, but this program is for two players. That you can

run it for one, but that's really a creative effort.

The whole package is well presented, an extensive information sheet goes with the tape, some instructions and good sets of graphics.

You also get a simple enough — it's a two-phase flight — and three shots of the graphics the game shows.

Copter Captive TI-99/4A (Extended BASIC) £7.95

Brown, Unit 11, Handmade
Aircraft, Newcastle upon Tyne
NE1 4PZ

There are two stages in Copter Captive. Only after completion of the first part may you attempt the next.

Your mission is to rescue parachutists following an alien attack. Unfortunately you have been taken captive, so you first escape by lowering from the sky, and at a time, to open the doors of your prison.

The first aim placed in a simple maze on the left and right of the screen, in the middle are the doors guarded by robots.

The captive appears at the top

left and is controlled by the up and down keys. Once he has started moving, theoretically, he will not stop until safely reaching a base or door.

I was able to freeze the screen, however, by any key other than those used in the game, which made control much easier than it should have been.

If the captive crashes into a wall or is caught in a robot, the game begins again from a different set up.

Having gained freedom, stage two starts immediately, back in the helicopter. Your flight must be controlled in order to avoid the alien units, get caught as easily as parachutists is possible.

microcomputer	100%
playability	100%
graphics	100%
value for money	100%

★★★★★

Paratroopers VIC-20 £9.99

Baker, 280 Station Road, Har-
row HA4 1DB

This is one of the best examples of user-defined graphics that I have seen, along with excellent sound effects, and a quite enjoyable game.

Casualty lists helicopter fly in from each side, with highly realistic helicopter sound. Little men jump out, and parachutes open on their backs.

The "You" aspect of this game consists of choosing them as they don't down if you shoot them parachutists off, their arms and legs that are they presented in a landing accompanied by a type sound.

Plane speaking

Airborne antics are the theme of this selection of games. Our squadron of reviewers airs its views

To start with, of course, it's a murder remembering, that a plane (which was in it) came to a hard computer program. For example, the plane goes when you push the joystick up.

That is all as your opponent, you can choose to add further hazards such as this or another.

With one clearly visible plane, but the two weapons are perfect, and only for a few seconds a

plane of it restores the other

All in all, this game is a worthy addition to anyone's collection.

microcomputer	100%
playability	100%
graphics	100%
value for money	100%

★★★★★

Battle of Britain VIC-20 plus 16K £9.50

Melcom, 111 Capel Road, Gars,
Luton, 1 Park, Luton MK1
4PZ

This program is of the same class as the other two. The idea is that you play the part of the pilot who is attacking the enemy's defence.

You control the position of 11 aircraft, and try to destroy a few.

Each aircraft has a number of points, which you can use to request.

As a result, an excellent 100 score is possible, and the machine can be used.

I found the game difficult to

get into, mainly due to the poor instructions. Some of the controls appeared odd in some ways.

A number of points I made to the machine of a score to the machine, which I found the machine to be a bit of a puzzle. The game was quite good, and I found it a bit of a puzzle.

Overall, a quite enjoyable game, which I found it a bit of a puzzle. The game was quite good, and I found it a bit of a puzzle.

The game was quite good, and I found it a bit of a puzzle. The game was quite good, and I found it a bit of a puzzle.

With a score of 100, a very good machine, which I found it a bit of a puzzle. The game was quite good, and I found it a bit of a puzzle.

microcomputer	100%
playability	100%
graphics	100%
value for money	100%

★★★★★

It really is a plane that programming of the necessary number should be based on a "game" that is an obvious advantage of the game.

But it is in the game, which is really a very good machine, which I found it a bit of a puzzle. The game was quite good, and I found it a bit of a puzzle.

microcomputer	100%
playability	100%
graphics	100%
value for money	100%

★★★★★



ATTENTION!

- all ZX81 (16K) and Spectrum (48K) users -
get this, the ...

Micro-Myte



60

Only

£48.00

complete, inclusive of
VAT, post and packaging
in the UK only.



It's the high speed computer phone link you have been waiting for
Transmits/receives at 1,200 Baud Three times the speed of most other
acoustic modems (including professionals).

Economical to use: Communicates data direct between compatible users.
Typically 120,000 bits per two minutes of telephone time. (Cheaper than a first
class letter.) Also twelve times faster than a telex.

Simple to operate: Connects directly to your cassette input/output sockets.
Use your home computer like an on line terminal. Link up with your friends by
telephone or cable.

The Micro-Myte 60, in its sturdy moulded plastic housing, complements your
home computer equipment.

**No fuss, no hidden
extra's, no rental
costs**

Each kit comprises an
acoustic modem (200) and
Spectrum software on
cassette, connection cable
and operating instructions,
together with a twelve month
guarantee.

**YOU CAN PRE-RECORD PROGRAM OR SCREEN
CONTENTS ON TAPE. YOU CAN TRANSMIT
OFF TAPE OVER THE PHONE AND YOU CAN
RECEIVE ON TAPE.**

STOP PRESS!

Micro-Myte 60 will
operate with all makes
of home computer
software
available soon

**YOU CAN NOW
TRANSMIT AND
RECEIVE
OFF TAPE!**

I am a ZX81/Spectrum user (specify) _____
Please send me Micro-Myte 60 modem(s) at £48.00
each (enclose cheque/postal order payable to
Micro-Myte Communications Ltd)
Name _____ Telephone _____
Address _____

0575

Micro-Myte
Communications Ltd
Polo House
27 Priory St
Stratford 1

Telephone (0273) 299373
Callers welcome

Free: 40 chances to win Virgin software — just find the words

GREAT prizes from Virgin could soon be on their way to you — if you're a winner in our first, easy-to-play word square competition.

There's £1,000-worth of software waiting to be won. That's a prize package worth about £25 for each of the 40 winners.

The prizes are for users of the Spectrum, BBC model B and Dragon computers.

How to enter

The word squares below contain a number of Virgin software titles. All you have to do is mark them clearly and fill in the squares — including your computer, so we know which prize to send.

Then cut round the envelope. You must write clearly on the back of the envelope in number of lines your found.

All the rules on the square, plus several more, are on this list.

Master Mystery	Exotic
Laurels	Tennis
Supers	Cost
Champion	Logic
Racing Manager	Lord
Overlord	Builder
Spectrum	The Island
Angus	Ghost Town
Killer	Killer Caverns
Death Cruise	1 Child

Start studying our word square now . . . every entry stands a chance of winning a share of £1,000-worth of games tapes

Cave Adventure	1708
Killer Patrol	Stomach
Big Beach	Landed
Space Adventure	Trench
Ghost	Chicks
Master	President
Flower	Two a Three
Kalypso	Four-Fer

You may enter as many times as you wish, provided each entry is on the official envelope — not a copy — and in a separate envelope.

Post your entry to Virgin Competition, Home Computing Weekly, 145 Charing Cross Road, London WC2H 9SL.

Entries close at five pm on Friday November 4.

The winners will be the first 40 correct entries accepted, regardless of computer.

The software and the names of the winners will appear in the next volume of Home Computing Weekly, and the prizes will arrive from Virgin Games within 28 days of this issue.



The word game

The first 40 correct entries will win the prize. Computers which are not fully completed and envelopes without the number of differences found on the back will not be considered.

Closing date is Friday, November 4, 1983.
Entries will not be accepted from

employees of Virgin Publishing, Virgin Games and Adventure Partners & Sons. You cannot use this square in computer families and squares of the computer.

The winners' names and the software will appear in Home Computing Weekly. The editor's address is 145 Charing Cross Road, London WC2H 9SL. Send no correspondence will be accepted and

Virgin Games Competition

Entry Coupon

Name

post code

Computer

Number of letters found

Post to Virgin Competition, Home Computing Weekly, 145 Charing Cross Road, London WC2H 9SL.

Closing date: five pm, Friday November 4.

RACINGMANAGERAANGLER
QOELQJIXIQUPTQAJWEQ
BEROFUSTARFIRETTEDBW
OKABHJSHARKOVERHIOFX
PIEIEKILLERCAYERMSJP
OPADUROFXWSTPBNODER
DOUQLENGSTRBOPICTCOYO
SCLUYIMICROBREENSALYL
XUNEDDENYAHIVAFOSFAG
VDITQARNHFOSTINGWLZLR
PCBZOYCBDOEMCOYOQOITY
QFVAFQUBXBI AFTQFCOSJ
UHLWHRXERYNRPVUTQOT
VNICKCYCISUICHINGROF
NPDOANHKOINSAINRISPUI
TQOASTWNMTSELLOPTBNW
RMETLZATIFLANKWALKUN
SCWLANDFALLCRUNCHERZ
SHVTNIMEOFOMTXJOETAD
CASTLEADVENTUREVLYOG

Writing for the new generation

A birthday present and a redundancy started Malcolm Evans of New Generation on a new career. Candice Goodwin found out how he lost a job — and gained a software company



Back in 1981 when the ZX81 had just been launched, software standards were generally pretty low. One exception to this rule was a program called 3D Monster Maze, which has been a firm favourite with ZX81 owners ever since. It first appeared in November 1981.

Monster Maze was, according to its creator Malcolm Evans, the first-ever true 3D game for the ZX81. As you moved along the perimeters of the maze, they appeared on the screen as you would see them in real life — moving now and then at various speeds as the roof of a long corridor going larger and larger every second, making you that you're about to be aware of how close it's coming from the monster quickly.

Even now the ZX81 has been overshadowed by more sophisticated home computers, the graphics on Monster Maze still look good. To Malcolm Evans, programming was the fascination of machines like the ZX81 is a challenge. "My aim is always to come up with something completely different", he said. "None of my games are direct copies of arcade games."

Malcolm now runs New Generation Software, but when he wrote Monster Maze, he was working full time for the microprocessor applications group at Sperry, Glenside. He took up ZX81 programming as a hobby, after his wife Linda bought him a ZX81 for a birthday surprise.

The birthday surprise turned out to be more useful than Linda had imagined. A couple of weeks after Malcolm had his first free order for Monster Maze from Smiths, he was made redundant from Sperry, and went into home computer software full time.

Compared to his work at Sperry, he finds games programming "very relaxed and enjoyable. Tense? It depends on how you look at it. I approach it from the point of view of pushing the machine to its limits. My 16 version of Pac-Man for the ZX81 was originally an exercise to see how much could be done in 16. The people at Smiths couldn't believe it."

As first, Malcolm was a partner in I. K. Green software. Then he specialised for licensed New Generation. Why? New Generation? "Well, it's mainly the new generation being software, isn't it?", Malcolm explained.

There has been, Malcolm has the company alone, as well as doing all the programming, with some help from his wife, Theresa, brother Rod, "the family business expert", joined him and went over the commercial side.

Malcolm says he used to spend seven hours a day running and business, and seven hours programming. But he didn't "now I spend all 14 hours programming — it doesn't seem to take more time any more free time. The programme isn't coming out any faster, either, but they're getting more complex. After all, I don't want to produce something that computer owners could make for themselves."

He has written all versions of New Generation's programs, the first for

the ZX81 and four for the Spectrum, and he has written 120 to four versions. In each new game, he tries to use new programming techniques, building on methods used in previous games.

"For example, I took the concept of first in first out from a 3D game and developed it as a new program, Contain", he said. "I particularly like 3D effects — they keep the player into the game."

Like Monster Maze, Contain is a maze game, but with circular corridors and doors that open and close. The aim is to get into the centre and avoid the monster by a terrible computer, half-boss, as it's called. Double may, now it's closed by a monster called Blob. "who does for most everything changes you if the monster appears it's gone."

Then when you do manage to break the code, you have to get out again — but now Blob has closed.

Malcolm is now writing exclusively for the Spectrum, partly because it's such a big market — each of his Spectrum programs has sold 30,000 copies — and partly because he likes it. "I've written more than 2000 software for the Spectrum", he says. "I almost prefer the ZX81 to the Spectrum, because it's more flexible."

"You can do things, like switching screens to show display files, that you can't do with the Spectrum, and I haven't found that the Spectrum has any major advantages to make up for the disadvantages. From the programmer's point of view, colour and sound are just two more things to worry about."

He is really with the program now on a Spectrum or a ZX81 but on a Sharp M2000, because it's larger (16K) memory, good video and resolution, and fast disc access. "If I run the program and a crash, I don't have to wait for him to reload a from tape", he said.

Malcolm finished, despite the long hours he puts into programming, like a lot more now than in the early days of his business, when he had to deal with mail order as well as everything else. "I've never been a do-it-yourself every weekend sort, and we're doing less than we used to," he says.

By using distributors, he doesn't even have to negotiate with shops — and now he finds his program running up in some unexpected places. "Would you believe it, I recently saw one program on sale in Cambridge."

He says the distributor that distributes only sells the code in terms of both price and program content, but he's not. "The important thing is to get into as many distributors as possible, and create a demand for your program. People go into shops and ask for the game, and a get back to the distributors."

Another reason why the pressure is rising is a recent notice that 100,000 copies of 15 Sharpware's Lynxport Vids, back to the grounds of the house is a computer that Malcolm's had reserved for use in an office. "It's all right, he says. "Now I see you sell out of bed and straight into work."

Write your own machine code adventures

Without any knowledge of machine code whatsoever

THE QUILL



THE QUILL is a unique and exciting system of machine code which allows even the novice programmer to produce high speed machine code adventures of superior quality in many minutes in this manner without any knowledge of machine code whatsoever.

Using a series of tables against you may create with ease new business decisions, chess and combat games, fantasy adventures. You may also tell them with objects and problems of your choice. Having used your abilities you may then send responses with any action, perhaps present at once. A game based adventure may be used to help the learner complete. When you have done with THE QUILL will allow you to produce a copy of your adventure which will run independently of the main QUILL software so that you may give copies away to your friends.

THE QUILL is provided with a detailed manual which covers every aspect of its use in writing adventures. It is impossible to describe all the features of this amazing program in a small space so we have produced a demonstration version which gives further information and an example of its use.

This demonstration is available at £12.95 and THE QUILL itself at £24.95.

FOR THE AM. SPECTRUM AT £24.95

Our Software is now available from many computer shops, universities, or direct from us by post or telephone.

Ask for full details of our range

Dealers enquiries welcome.

GILSOFT

20 Newburn Road
Barnsley
South Yorkshire
S70 2JY
Widdow 714044

TELEPHONE YOUR ORDER
WITH



CHRISTINE COMPUTING

TI-99/4A colour computer	£104.95
Compatible cassette recorder	£24.98
Single cassette interface lead	£4.35
Dual cassette interface lead	£5.45
Recorder + single lead	£28.75
Recorder + dual lead	£29.75
Computer + recorder + single lead	£133.50

Software Cartridge —	Extended Basic	£51.50	
Minimemory	£51.50	Parsec	£24.50
Chess	£29.50	Invaders	£17.00

Software Tape — Corel, Blast It,
Speedz, Code Break/3D Maze, U.F.O.
all @ £3.50 each.

All prices inclusive, send 50p (refundable on 1st order) for full list, Cheques or PO's to:
4 Florence Close, Watford, Herts WD2 6AS.
Tel: 09273 72941

TI 99/4A
Home Computer
only £99.50

TEXAS INSTRUMENTS

TI 99/4A Solid State Software

Some of our Crazy Prices:

EXTENDED BASIC	£51.25
MINI MEMORY	£51.25
BLASTO	£10.50
CHISELM TRAIL	£16.90
TUNNELS OF DOOM	£10.50
SOCCER	£11.50

Post & Packing Free - VAT included
Send S.A.E. for full price list
Please make cheques payable to

PARCO ELECTRICS

4 Street Place, New Street, Middlesbrough,
Cleveland, TS1 1AE
Tel. Middlesbrough (04647) 44425

How you can crack the code

What can these assemblers, disassemblers and monitors tell all

Oric-1 Extension Monitor £95 Oric £15

Leeman Associates, 1 Marlborough Drive, Woking, Surrey GU24 0BQ

This useful and easily managed package is designed to provide the Oric-1 user with a comprehensive

language extension monitor. The package covers a very limited range of the techniques of programming in assembly or machine code and is not intended as a guide to assembly language programming.

The main, comprehensive manual supplied with the package is very easy to read and understand. Screen display has been well thought out and long and short codes and a printer facility are provided.

Address addresses are represented by symbols.

All your programs can be made to examine and modify lists of memory code, and delete single lines or blocks as a whole in longer programs or delete printed output of programs, as well as some methods to input text in the Oric monitor or printer.

Many of these facilities I have previously only seen offered on expensive word processors.

Switching to the second part of the monitor, which converts the source code into object code into form understood by the Oric and reproduced, it is a simple matter.

The object code can be displayed on screen, printed to a printer, saved in memory, and a hard copy taken, all under your control.

The monitor makes two points change for the user.

Full Screen Editor/Assembler Spectrum £9.95

Orford Computer Publishing, PO Box 91 Oxford

This is the most powerful machine code programming tool I have seen. Coupled with the Machine Code First Tool package from the same company, it would give a very complete machine code programmer.

The package consists of two parts. On the first, various code lists such as assembly reference lists from one point being retained for use by the other.

The first part of the reference code is a very good program in processing code with data

D.A.S.M. Dragon £18.95

Companing, PO Box 395, London N11 4BT

D.A.S.M. is a simple machine code monitor for the Dragon II. It is a cartridge, from which it is not too hard to keep away many other code to assemble some code. The cartridge has a table facility and would not take much of a knock to come back.

The monitor is supplied with a manual, the cartridge is supplied with a manual, the cartridge is supplied with a manual, the cartridge is supplied with a manual.

The cartridge does not improve your machine code programming and does not allow you to change it around — as other monitors do not a monitor. It does, however, make a good point to enter code into the computer. D.A.S.M. offers

levels of pay, length, which is most useful when using a large M/C program.

It gives a comprehensive range of error messages, short but to the point.

All the information in the D.A.S.M. monitor is not supported and the cartridge is not a handy reference tool.

A sample of our assembler D.A.S.M. monitor will return to D.A.S.M. after assembling your program. Also available in other languages, but not a printer would be used for the monitor.

In conclusion, very good, simple to learn and good value. C.C.

and various	100%
range of	100%
display	100%
value for money	100%

★★★★★

It does a lot of the work for you, but it does not do the work for you. It does a lot of the work for you, but it does not do the work for you. It does a lot of the work for you, but it does not do the work for you.

I have some doubts about the monitor's value for money.

It does a lot of the work for you, but it does not do the work for you. It does a lot of the work for you, but it does not do the work for you. It does a lot of the work for you, but it does not do the work for you.

and various	100%
range of	100%
display	100%
value for money	100%

★★★★★

Assembler/disassembler Oric-1 £6.95

David High Code, Centre Point, London, W1C 2AB

Two BASIC programs in one.

The monitor program can open any file, so you can use the Oric-1 to open any file, so you can use the Oric-1 to open any file.

When you use the program, you can use the program, you can use the program, you can use the program.

The monitor has a lot of facilities, such as a printer, a printer, a printer, a printer.

The monitor has a lot of facilities, such as a printer, a printer, a printer, a printer.

language, but it is not a language, but it is not a language, but it is not a language, but it is not a language.

One major thing is, it is not a language, but it is not a language, but it is not a language, but it is not a language.

The monitor has a lot of facilities, such as a printer, a printer, a printer, a printer.

The monitor has a lot of facilities, such as a printer, a printer, a printer, a printer.

and various	100%
range of	100%
display	100%
value for money	100%

★★★★★



The first calculator review and comes with a table of numbers and their values. This second calculator the first calculator the first calculator the first calculator.

The first calculator the first calculator the first calculator the first calculator the first calculator the first calculator the first calculator the first calculator.

The second calculator the first calculator the first calculator the first calculator the first calculator the first calculator the first calculator the first calculator.

how to play in your computer's and you can see the results of each part of the program as you go. The monitor has a lot of facilities, such as a printer, a printer, a printer, a printer.

The monitor has a lot of facilities, such as a printer, a printer, a printer, a printer.

The monitor has a lot of facilities, such as a printer, a printer, a printer, a printer.

program. This is useful to the user as the monitor has a lot of facilities, such as a printer, a printer, a printer, a printer.

and various	100%
range of	100%
display	100%
value for money	100%

★★★★★

sinclair special

5



*Inside...
New Interface 2
and ROM cartridges!
New Software!*

TAKING NEW SOFTWARE IN NEW DIRECTIONS

You'll see that the issue of Sinclair special devices considerably opens to software why when we're up much to any about hardware and peripherals? Simply because all Sinclair are better in supporting first class hardware with their class software.

This month sees the start of a new series of items to education in our catalogue, both for adults and children.

In the field of micro theory, we've programs like Beyond BASIC and Make a Chip which take you through the creation of simple ZX² assembler subroutines to simulated circuit design projects.

There's Micromaster, to teach you master technology, new values and comparison.

And if you're keen to test your Spectrum at chess (which can be handy, you'll certainly want to try Chess Tutor 1, the first problem is a complete chess masterpiece.

Coming soon ...

in the pipeline are many new releases, some of which are completely new ground. LOGO and micro PROLOG for instance. They're fifth generation languages which will take you and your Spectrum closer than ever before to the creation and application of artificial intelligence.

A formal agreement between Sinclair and Macmillan Education has been announced, the first results of which will be published this autumn. There's a series of five programs in a complete early reading course, plus the first four of a series of programs based on Macmillan's top-selling Science for Schools Scheme. All programs are designed for use in schools or at home.

And with Microboard software, we're publishing six more home education programs for primary school children. Covering alphabet, spelling and punctuation, each of these programs is a manager, unlike any other education software, and teaching you to run, even to build it!

I believe that these new titles represent a major advance in educational software for the home.

New ROM software tool

You may well have heard news of ZX interface ROMs and ROM cartridge programs. You'll find full details at the back of our software on the facing page, but there is an order form on the back page too. These offer an instant games playing facility at unbeatable prices. And expect the possibilities of using your Spectrum to get another dimension.

Alison Maguire

Alison Maguire
Applications Software Manager

SOFTWARE UPDATE

The latest cassette software for ZX² Computers



Chess Tutor 1 For 48K RAM Spectrum £9.95.

Chess Tutor is a new way of learning all about chess - using your ZX Spectrum.

It starts from the beginning for teaching you about the chess pieces and the way they move, including castling, en passant, promotion, checkmate, stalemate and perpetual check.

Then it teaches you the basic tactics - pins, forks, double attacks and skewers.

There are over 600 questions and over 200 questions for you to answer - with diagrams, some will have from your ZX Spectrum while you wait there.

You can choose which parts of the course you want - and even experienced players may be surprised at what they can learn from Chess Tutor.



Musicmaster For 48K RAM Spectrum £9.95.

Musicmaster turns your ZX Spectrum into a musical instrument, which will not only play tunes, but will also demonstrate key signatures, durations of notes, and scales.

You can write your own tunes - in any key - play them over and over again, save them on tape, modify them.

You can either write your music on a mixer, or place a simple melody on your Spectrum for a 17-note keyboard.



Make-a-Chip For 48K RAM Spectrum £9.95.

Make-a-Chip teaches you the basic elements of circuit design, shows you how they fit together, and demonstrates you design and test your own circuits.

When you have designed a circuit, you can give it inputs and outputs and your ZX Spectrum will check that you. Then it will run it, or tell you what's wrong so that you can modify it.

Make-a-Chip is a fascinating way of finding out how computer logic works.



Print Utilities For 16K and 48K RAM Spectrum £9.95.

Increase the printing and display facilities of your ZX Spectrum with the Print Utilities program.

Print Utilities enables you to enhance your programs by generating the colors of eight different colors which you can plot anywhere on your screen.



Beyond BASIC For 48K RAM Spectrum £9.95.

Takes the mystery out of assembler. Take the mystery out of machine code.

Beyond BASIC goes point by point through into the workings of your ZX Spectrum. It explains what happens inside your micro when you run a program, and it teaches you simple 260 machine code programming.

A major feature of Beyond BASIC is that it enables you to write your own 260 assembler program - then you can actually see on your screen how they affect the ZX Spectrum memory and registers.

ZX INTERFACE 2⁺

The New ROM Cartridge/Joystick Interface

**Loads programs instantly!
Takes two joysticks!
Just plug-in and play!**

The ZX Interface 2 is the latest new peripheral for the ZX Spectrum[™] system. It enables you to use new ZX[™] ROM cartridge software—plug-in programs that load instantly. It allows you to use two standard joysticks, without the need for separate, special interfaces.

To use new ZX ROM cartridge programs, just connect Interface 2 to the rear of your Spectrum or Interface 1 and plug in the cartridge of your choice. The program is then loaded, ready to run!

You can use any joystick that has a 9-way D plug. Use one or two of them for extra fun with ZX ROM cartridge or Sinclair cassette programs—or with dozens of other Spectrum-compatible programs!



...AND BRAND NEW ROM CARTRIDGE SOFTWARE!

There's already plenty of choice of ZX ROM cartridge programs for your Spectrum. Some are old favourites, in an exciting new form. Others are new.

And now, thanks to ROM cartridge technology, you can run them all on a 128K RAM Spectrum, even if they were originally written only for 48K machines!

Every ROM cartridge program loads fast and faultlessly. No wires, no waiting, no worries about loading errors! All of them are affordably priced too, at £14.95.

New! P888BT



Robbie the Robot ate it in his garden. Help him bring compost to cultivate his prize Thymus-Magga (Glycinophylla). Help

formulate the right choice of pesticides to ward off devilish insects. Stop the insects breeding to overtake his garden before Robbie's plant has blossomed. P888BT is horticulture with a futuristic twist!

One and two player options with a host of features including sound effects.

Chess



This sophisticated program does everything you'd expect in board games level and much more besides.

The 8 high resolution chess board and pieces are arranged in arrow and column systems so it's easy to keep in your mind.

At any stage of the game you can request the computer to suggest a move, invert roles or change the level of play.

Full colour high resolution graphics.

Backgammon



Everything you need to play the famous and deceptively simple board game. Board, stones, rolling dice and doubling dice are shown in full colour and high resolution. Choose from four levels of skill to suit experts and beginners alike—full rules are included.

Space Raiders



Your skill is all that's stopping a succession of aliens from conquering Earth. Use your gun skills to attack. Shields defend. Build up, move on and blast the passing alien spacecraft. Full colour high resolution graphics with sound.

Planetoids



Dodge and we're away using your thrust button. Turn via joystick. Fire! But beware—the alien ship moves

fast to destroy you with cluster bombs. And when it comes to the crunch, use your hyperspace button!

Full colour high resolution graphics with sound.

Hungry Horace



Horace is hungry. He wants to eat the plants in the park by germs.

He needs your help. Use your joystick to move Horace and his shovel to dig the plants by germs.

You'll have to be quick to keep Horace out of trouble!

Full colour high resolution graphics with sound.

New! Tranz Am



Set in a future time ruled by cars and computers, in a land where petrol replaces gold, and chaos is permanent at the 5 Grand Cops of Ultimate

Driving your Super Blown Ford Racer, use your skill to steal and crash the Candy Black Turbo. Use your instruments to locate and collect the trophies—before you overheat or run out of fuel.

A program with outstanding multi-directional movement, graphics features, and a playing area equivalent to more than electronic screen area.

Horace and the Spiders



Guide Horace on his hazardous journey to the contaminated house full of poisonous spiders.

Safety in the house: you must move along sideways, choose a spot and jump! The program will be a bumpy—spelling to repair their poisonous web.

And when a spider is spawning a new web, you're safe to attack and destroy it!

All at the spiders, and a one web spiders, with even more spiders to catch.

Full colour high resolution graphics.

New! Cookie



"No! No! Choose the Chef" who brings two ingredients, baked in the oven. But if the huge giant escapes, they

bring the invisible monster with them!

You must jump the bouncing ingredients with four buttons and knock them into the mixing bowl. Stop them getting into the dustbin, at all costs. And beware of Noodles that get into the mixing bowl!

Cookie is fast moving game in the party, with a lot of real characters. A program to make you smile—and sweat!

New! Jet Pac



JetPac? Jet Pilot of the Jetpac Inter-Cluster Transport Company. Your task is to deliver and assemble spacebits

help. On your way round the galaxy, you're free to collect precious stones and gold.

The Jetpac? Planet has a precious and scarce. And the planet don't take kindly to the theft of their treasures. You'll need your wits and your laser!

With a host of features, multi-directional movement, explosions, sound effects and one and two player option.

ZX MICRODRIVE



NOW ON RELEASE

The ZX Microdrive System – as you'd expect from Sinclair – is unique to the world of computing. It's a compact, expandable add-on system which provides high-speed access to massive data storage. With just one Microdrive alone (and Interface 1), you'll have at least 80K bytes of storage, the ability to LOAD and SAVE in mere seconds, the beginnings of a local area network of up to 64 Spectrums, and a built-in RS232C interface! The cost? Less than £80 for each Microdrive.

How to get ZX Microdrive
Spectrum owners who bought direct from us, by mail order, have been

sent full details. Order forms are being mailed in strict rotation, so if you haven't yet received your order form please bear with us. We're making good progress in meeting the huge demand.

If you didn't buy your Spectrum by mail order, don't worry. Send us the form from the bottom of this page. We'll add your name to the mailing list, and send you details by return.

Each Microdrive costs £49.95. Interface 1 costs £49.95, but just £29.95 if purchased with a ZX Microdrive. Extra ZX Microdrive cartridges: £4.95.

How to order

Simply fill in the relevant sections on the order form below. Note that there is no postage or packing to pay on some purchases. Orders may be sent **FREEPOST** (no stamp needed). Credit card holders may order by phone, calling 01-200 6800, 24 hours a day. 14-day money-back option, of course. Please allow 28 days for delivery.

* ZX 24 Spectrum ZX Interface and ZX Microdrive are all registered trademarks of Sinclair Research Ltd.

sinclair

Sinclair Research Ltd, Warrington Road, Camberley, Surrey GU15 3PS. Telephone: (0314) 655215.

To: Sinclair Research Ltd, FREEPOST, Camberley, Surrey, GU15 3PS.

Section A: Hardware

Qty	Item	Code	Unit Price £	Total £
—	ZX Interface 1	0001	£49.95	
—	ZX Spectrum + add.	0000	£99.95	
—	ZX Spectrum + int.	0002	£99.95	
—	Postage and packing (Interface 1 only)	0003	£3.00	
—	Postage and packing (Spectrum only)	0004	£3.00	
			TOTAL £	

Section B: Software ROM CARTRIDGE PROGRAMS

—	OSPREY: Phoenix	0005	£4.95	
—	OSPREY: Space Invaders	0006	£4.95	
—	OSPREY: Magic Mirror	0007	£4.95	
—	OSPREY: Hercules and the Spiders	0008	£4.95	
—	OSPREY: Knight	0009	£4.95	
—	OSPREY: Circle	0010	£4.95	
—	OSPREY: Tetris	0011	£4.95	
—	OSPREY: Jet Set	0012	£4.95	
—	OSPREY: Backgammon	0013	£4.95	
—	OSPREY: Chess	0014	£4.95	

ORDER FORM

CURRENTLY PROGRAMS for ZX Spectrum

0015	OSPREY: Jet Set	£4.95	£4.95
0016	OSPREY: Tetris	£4.95	£4.95
0017	OSPREY: Backgammon	£4.95	£4.95
0018	OSPREY: Chess	£4.95	£4.95
0019	OSPREY: Jet Set	£4.95	£4.95
			TOTAL £

* I enclose a cheque/postal order made payable to Sinclair Research Ltd for £.

* Please charge to my Access/Aftercard/Trustcard account no.

* Bank/Account

£

Signature

Mr/Ms/Ms

Address

9/10/85

(Please print)

ZX Microdrive information request

Please add my name to the Microdrive Mailing List, and send me a colour brochure with full specifications of ZX Microdrive/Interface 1 ☐ (tick here). You can use the above form to send us your name and address.

HOME COMPUTING WEEKLY CLASSIFIED

Lineage
35p per word

Some display: £6.00 per single column centimetre
Ring for information on series bookings/discounts.

All advertisements in this service must be personal.
Advertisements are accepted subject to the terms and conditions printed on the advertisements card (available on request)



**01-437 1002
EXT 282.**

Send your requirements to:
Debra Stuppé
ASP LTD.
145 Charing Cross Road,
London WC2H 9EE

ACCESSORIES

COMPUTER ADDICTS As low a computer built entirely for the home computer and accessories. No visit needed to help your equipment take fully and made for use on a private site. How many you want, no without any initial visit from personal support & lower charges. Prices from £18.50 + p.p.s. 50p. Send now for further information to: **Computer Addicts**, 101 Walsley Ave., Walsley, Salford, S18 2PL. 24hr. appointment.

CLUBS

software exchange swap and used software. Free club membership. £1 per swap rate for direct UK DEC, ICL, etc. 10 Turrell Grove, Hatfield, Herts. AL9 8JH.

RECRUITMENT & COURSES

10 SOFTWARE
Programs, software, courses, etc. for sale. 101 Walsley Ave., Walsley, Salford, S18 2PL.

10 SOFTWARE
Programs, software, courses, etc. for sale. 101 Walsley Ave., Walsley, Salford, S18 2PL.

FOR HIRE

10 SOFTWARE
Programs, software, courses, etc. for sale. 101 Walsley Ave., Walsley, Salford, S18 2PL.

10 SOFTWARE
Programs, software, courses, etc. for sale. 101 Walsley Ave., Walsley, Salford, S18 2PL.

SERVICES

10 SOFTWARE
Programs, software, courses, etc. for sale. 101 Walsley Ave., Walsley, Salford, S18 2PL.

10 SOFTWARE
Programs, software, courses, etc. for sale. 101 Walsley Ave., Walsley, Salford, S18 2PL.

2000 REPAIR SERVICE

Send your faulty 2000 for the repair service. We will repair your 2000 for £10.00. 101 Walsley Ave., Walsley, Salford, S18 2PL.

DO YOU ORDER A SERVICE PEOPLE IN COMPUTING?

REQUIRED IF NO WHY NOT TELL THEM ABOUT IT?
**01-437 1002
EXT 282 TO APPEAR IN THE SERVICE SECTION.**

PROGRAM DUPLICATION

QUALITY-CERTIFIED AFTERNOON
101 Walsley Ave., Walsley, Salford, S18 2PL.

FOR SALE

101 Walsley Ave., Walsley, Salford, S18 2PL.

101 Walsley Ave., Walsley, Salford, S18 2PL.

101 Walsley Ave., Walsley, Salford, S18 2PL.

SOFTWARE APPLICATIONS

VIC IMITATOR

101 Walsley Ave., Walsley, Salford, S18 2PL.

SPECTRUM COPYCAT

IMPROVED COPYCAT
Simple for use. Copycat can copy any file on a 5.25 floppy disk. 101 Walsley Ave., Walsley, Salford, S18 2PL.

101 Walsley Ave., Walsley, Salford, S18 2PL.

101 Walsley Ave., Walsley, Salford, S18 2PL.

101 Walsley Ave., Walsley, Salford, S18 2PL.

101 Walsley Ave., Walsley, Salford, S18 2PL.

101 Walsley Ave., Walsley, Salford, S18 2PL.

101 Walsley Ave., Walsley, Salford, S18 2PL.

101 Walsley Ave., Walsley, Salford, S18 2PL.

101 Walsley Ave., Walsley, Salford, S18 2PL.

101 Walsley Ave., Walsley, Salford, S18 2PL.

101 Walsley Ave., Walsley, Salford, S18 2PL.

HARDWARE

101 Walsley Ave., Walsley, Salford, S18 2PL.

101 Walsley Ave., Walsley, Salford, S18 2PL.

SOFTWARE GAMES

101 Walsley Ave., Walsley, Salford, S18 2PL.

SPECTRUM PROGRAMS

101 Walsley Ave., Walsley, Salford, S18 2PL.

SOFTWARE EDUCATIONAL

101 Walsley Ave., Walsley, Salford, S18 2PL.

CLASSIFIED ADVERTISEMENT — ORDER FORM

1	2	3
4	5	6
7	8	9
10	11	12
13	14	15

PREFERRED CLASSIFICATION

Advertise nationally for only 35p per word (minimum charge 15 words)

Simply print your message in the coupon, and send with your cheque or postal order made payable to Argus Specialist Publications Ltd to:

CLASSIFIED DEPT., HOME COMPUTING WEEKLY,
248 Cleaving Court Rd., London WC2H 9SE
Tel: 01-407 1000

Name

Address

Tel. No. (Day)



Please place my advert in Home Computing Weekly for _____ weeks.
Please indicate number of insertions required.

**Nearly 700 Programmes
IN STOCK**
Ring for our Price List

CLWYD PERSONAL COMPUTERS

Unit 19 Daniel Owen Precinct, Mold CH7 1AF
Telephone: Mold 56842

400 inc BASIC £115

800 £290

48K Lynx £215

COMMODORE 64 £225

ORIC 1 48K £139.99p

Phone Orders Welcome on **0352-56642**



Postage & Packaging FREE

NEXT DAY DELIVERY AVAILABLE Please ring for details

I enclose cheque/PO for £ _____
or please debit my Access Card No _____

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NAME

ADDRESS

MC 411

LOOKING FOR SPARE TIME EARNINGS?

Then why not sell software to your friends and workmates.

There are probably hundreds of micro users in your area looking for software who are wary of mail order and cannot find a local dealer. You can become that local dealer.

We are looking for agents in all areas to sell software for the Spectrum, ZX81, VIC-20, CBM 64, BBC, Dragon, Atari, Oric 1 and Lynx. All the latest titles in stock. Write now for full details or telephone if you prefer.

Joysticks, joystick interfaces and Spectrum sound boosters along with CBM 64, Spectrum and Lynx 48K Computers also available.

If you are interested in becoming a Bytewell agent in time for the predicted boom in sales this Xmas then write or telephone now.

**BYTEWELL, 203, COURT ROAD,
BARRY, S. GLAMORGAN, CF6 7EW**
Telephone (0446) 742491

NEW HOME COMPUTER CABINET

SPECIAL OFFER £79.95.

incl VAT & Delivery



Especially designed for your home computer system whilst also accommodating your video recorder

Our cabinet has been custom designed after intensive consultation with P.C. users to provide maximum comfort and convenience during those long hours spent slaving over a hot monitor

The cabinet includes many features not previously available and as well as combining the very best aspects of modern furniture design it provides an ergonomic and practical layout for all the major components of your system

In fact we are proud to claim that your cabinet will look perfectly at home in your lounge, dining room, or even bedroom

52 1/2" height 33" width 16 1/2" depth

JUST CHECK THESE STANDARD FEATURES

- 1 Smooth sliding shelf locks in position yet when you push it - it and nearby plates easily slide out
- 2 The computer shelf has been designed to allow adequate knee room for you to sit comfortably and will swing programmes back-side
- 3 Adequate room to position tape recorder printer and device and adequate computer for ease of use
- 4 An easily-lifted and safely out of sight while allowing albums to be permanently concealed if desired
- 5 Lots of storage space for cassette, cartridge, books, filing paper, synths, etc
- 6 Vitrin shelves and doors closed - instantly converts to elegant piece of furniture
- 7 The top shelf accommodates all sizes of video recorder currently available
- 8 Brand new effect finish
- 9 Supplied as a flat pack. Very simple to assemble using just a screwdriver. Full instructions supplied



TERMS OF OFFER (UK Mainland Customers only) Please allow up to 28 days for delivery. Cash with order or charge to one of the credit card accounts specified. Minimum bank guarantee if not satisfied provided the goods are returned undamaged within 12 hrs of the customer taking receipt.

ORDER FORM

Please send me one of your new Home Computer Cabinets as advertised. I enclose my cheque for £79.95 or please debit my

Account/Bankcard No

Name (Block letters)

Signed

Address

MARCOL CABINETS, 8 Rudge Street Southampton SO1 0AL Tel (0703) 38455

(24hr answering)

